

https://dspace.org/

Theory and practice in continuous assessment: a discussion of an examplar of CASS practice in a Johannesburg secondary school, in the light of a paradigm shift in the official perspective on assessment

Holcroft, Edward O.

2014-04-07
http://hdl.handle.net10539/14525

Downloaded from a DSpace repository. https://dspace.org/

Theory And Practice In Continuous Assessment: A Discussion Of An Exemplar Of CASS Practice In A Johannesburg Secondary School, In The Light Of A Paradigm Shift In The Official Perspective On Assessment.

Research Report
by

Edward O. Holcroft

University of the Witwatersrand, Johannesburg, South Africa

Supervised
by

Dr. Yael Shalem

University of the Witwatersrand, Johannesburg, South Africa

with expert advice from

Dr. Katherine Cress

Boston College, Chestnut Hill, MA, United States of America

Submitted in partial fulfilment of the requirements
for the degree of

Master of Education

in
Curriculum Studies

Contents Page

Declaration i

Acknowledgement ii

Abbreviations iii

Abstract iv

Contents v

Chapter 1

Introduction and Rationale

Statement of the Problem 1

Scope and Objective of the Study 2

Chapter Overview 3

Chapter 2

The Official Position

Introduction 6

Three Core Principles: The Foundation of Educational Renewal 8

Towards Application of the Core Principles: From National Qualifications Framework to Curriculum Framework 14

The Core Principles and the National Department of Education 17

The Core Principles and Specific Strategies for Intervention in the National Department of Education 24

Towards the Clarification of Policy in the National Department of Education 27

The Core Principles and the Gauteng Department of Education: An Exemplar of Local Implementation of National Policy 30

Conclusion 35

Chapter 3

Literature Review Part 1

A Synopsis of Selected International Experience

Introduction 37

Case 1: England and Wales 39

Case 2: The United States of America 43

The State of Kentucky 43

The State of Vermont 46

The Continuous Assessment in Science Programme: A Vermont Department of Education CASS Initiative 47

Authentic Assessment 49

Case 3: South Africa 58

From the Outside Looking In 63

Declaration of a Heretic 65

Conclusion 69

Chapter 4

Literature Review Part 2

Conceptual Framework

Introduction 71

The First Layer: A View of Theory and Practice 73

The Second Layer: An Underlying View of Curriculum 76

Critical Curriculum: Stenhouse's Notion of the Educator as Researcher 76

Critical Curriculum: Cornbleth's Notion of Curriculum as Practice 84

The Third Layer: How Open-Ended Can Open-Ended Be? 90

Classification and Frame 95

Collection Codes and Integrated Codes 97

Ground Rules and Performance Rules: Towards an Application of Educational Knowledge Codes 100

Codes and the Social Logic of the Message System Evaluation 103

Conclusion 111

Chapter 5

Methodology

Introduction 113

A Naturalistic Study 114

"Methodological Eclecticism" 115

Interview 116

Observation of Classroom Practice 117

Questionnaire 118

"The Absence of a Formal Hypothesis" 119

"As Unobtrusive as possible" 120

Conclusion 121

Chapter 6

An Exemplar of CASS Practice

Introduction 125

Why Design and Technology? 125

The School as a Developing Milieu 129

Design and Technology: Basic Design and Educator Perspective 139

Origin of the Course 139

Basic Design and Selection of Material 140

Weak Classification and Strong Framing: Issues in the Contextualisation of Design and Technology 143

Introduction 143

Weak Classification of School Knowledge and Everyday Knowledge 146

Weak Classification and Recontextualisation of Disciplines 147

Weak Classification of Criteria 154

Weak Classification and Strong Framing: Central Features in Pedagogical Regulation 158

The Contract 160

Sequence, Pacing and Deadlines 166

Reprofessionalisation of the Educator 174

Conclusion 181

Chapter 7

Conclusion

The Progression and Significance of the Argument 188

Further Policy Development and the Enhancement of Educator Professionalism 189

The Way Forward 190

References 191

Declaration

I declare that this research report is my own, unaided work. It is being submitted in partial fulfilment of the requirements for the degree of Master of Education at the University of the Witwatersrand. It has not been submitted before for any degree or examination in any other university.



Edward Holcroft

8th day of March, 1999.

Acknowledgement

This work would not have been possible without significant contributions from the following people:

Yael, my supervisor who not only gave freely of her academic skills but guided me through the personal crises that frustrated the growth of the report. Her encouragement and understanding when the stresses of the workplace hampered my academic pursuits provided the means for the progress and completion of the report.

Kate, who initiated the research process by her fascinating workshop series when she was a visiting Fulbright scholar from Boston in 1996. She was also expert adviser during the research process.

My mother and The Council for Education, Witwatersrand for financial support.

Nan, my mentor of many years, for proofreading so graciously and at very short notice.

My wife and children, who clarified my vision.

Abstract

Continuous assessment (CASS) is a contested terrain in education. This is true with regard to its definition, implementation and value for learning. This research captures the nature of the dispute in South Africa and details its development and current status. CASS is understood and examined in this report as a paradigm shift in assessment in South Africa. The notion of CASS is placed against a broader perspective of CASS in the international educational arena and against the South African national and provincial contexts. The theoretical contextual data is read against the school context in the form of a critical analysis of an exemplar of CASS practice. The research has two main goals. Firstly it offers a perspective from which to view CASS and develop strategies for intervention. Secondly, it shows at the levels of theory as well as implementation, how CASS can simultaneously embrace the principles of regulated practice and open-endedness. This aim is achieved primarily by means of critical exemplar analysis. The value of the report is twofold. Firstly, it provides an outline of the nature of the paradigm shift that is necessary for the effective implementation of CASS. Secondly, the exemplar provides a concrete model for the application of the principles involved in such implementation, thereby proving to the reader that it is both conceivable and practicable. Educators and administrators are the intended audience of this report.

Key words:

assessment
teaching and assessment
continuous assessment
curriculum development
teacher as a researcher

Abbreviations used in this work

ANC - African National Congress

CASS - Continuous Assessment

CF - Curriculum Framework

CPESS - Central Park East Secondary School

CSE - Certificate of Secondary Education

EIC - Education Information Centre

GDE - Gauteng Department of Education

HSRC - Human Sciences Research Council

KDE - Kentucky Department of Education

KEA - Kentucky Education Association

LL - Lifelong Learning

NDE - National Department of Education

NQF - National Qualifications Framework

SAQA - South African Qualifications Authority

VDE - Vermont Department of Education

Chapter 1

Introduction

Statement of the Problem

Continuous assessment (CASS) was officially introduced to South African schools during 1996. Schools have been left largely to their own devices as regards the implementation of this exciting and demanding new mode of assessment. Full-scale implementation has yet to occur, due to inadequate in-service training and infrastructure to effect it. As a result of the stasis in official implementation, many educators have become frustrated. However, this research shows that not every educator has accepted the situation as inevitable or inescapable.

The issue of CASS is seen in this work as a question that opens up a vista of pedagogical systems and practices that were previously either suppressed or only partially permitted. These include school-based curriculum development, educators as research professionals and educationally meaningful assessment practices, all of which are openly encouraged in the new assessment paradigm. The research examines the opportunity that is attendant to the issue by explaining the nature of the required paradigm shift and by describing and analysing an exemplar of successful CASS practice.

Scope and Objective of the Study

The research cannot cover the full spectrum of possibilities for the enactment of CASS: these are established in terms of the nature and extent of educator creativity and imagination in the formulation a CASS response that is uniquely appropriate to a particular assessment environment. It does however, examine three delineating aspects of CASS. Firstly, it traces the development of official policy leading to the implementation of CASS. Secondly, it sketches a conceptual background that can be enabling for novel responses in curriculum development, research-based professionalism and the integration of learning and assessment. Thirdly, it offers a case study in the light of the conceptual background, of how a CASS approach has been implemented.

The overview of official policy is a summary of the genesis and historical development of the NDE's vision of CASS and it's implementation in Gauteng by the GDE. The conceptual background is positioned from within a critical review of the writings of Brian Fay (1975 and 1985), Lawrence Stenhouse (1975), Catherine Cornbleth (1990) and Basil Bernstein (1975 and 1990). The single case study is a critical description of an exemplar of good CASS practice, interpreted in the light of the conceptual framework that is posited in the literature review. The work of Basil Bernstein has special prominence in the analysis of the case study.

Chapter Overview

Chapter 1 is this chapter, the introductory remarks to the report.

Chapter 2 is an outline of the official position on CASS. Here I consider the position of the National Department of Education (NDE) and the Gauteng Department of Education (GDE) against the background of lifelong learning, the National Qualifications Framework (NQF), the Curriculum Framework(CF) and Outcomes Based Education (OBE). I identify the principles of legitimacy, flexibility and integration as ideas crucial to the meaningful contextualisation of CASS. I show in this background chapter that CASS implies a change in our understanding of how learning and assessment work, as well as a shift in the balance of power in the pedagogical relationship between the educator and the learner. Finally, I show that the implementation of CASS has been fraught with bureaucratic difficulties from its inception right up to the time of going to press.

Chapter 3 is a review of three international case studies of CASS, as well as an illustrative case of opposition to CASS. The cases of England and Wales, and the United States represent working models, whilst that of South Africa represents some of the first tentative steps towards such a model. This chapter does not suggest that these models represent the scope of CASS practice. Rather, it is a description of the distinguishing characteristics

of those cases in which CASS practice has been a success. The chapter closes with the dissenting voice of the Australian educationist Putland, against the notion of CASS. This does not capture all the objections against CASS, and there are certainly others writers that are strongly critical of alternative forms of assessment such as CASS (*e.g.* Mulholland: 1997). Putland's point of view serves to draw attention to some of the objections that have been directed at CASS, and to affirm that CASS as a form of alternative assessment does not necessarily enjoy universal approval.

Chapter 4 explains the theoretical shift that is required for the assessment practitioner that acts in the role of a reflective research professional to comprehend the conceptual demands of assimilating and enacting CASS. I consider the nature of the relationship between theory and practice and the impact of this relationship on one's understanding of curriculum, in particular the idea of school based curriculum development. I develop my view of curriculum in terms of the process model of Stenhouse (1975) and the critical model of Cornbleth (1990). The most important thrust of the chapter is to show that the adjustment of pedagogical boundaries demanded by the rationale of CASS is a compound process, in both theoretical and practical terms. I draw on Bernstein's (1975) notion of educational codes to illustrate this and show its implications for assessment. I show how meaningful CASS performances can be accomplished in terms of an understanding and application of these codes.

Chapter 5 is a description of the research methodology of the report. I describe the way in which I use techniques such as observation of classroom practice, interviews, questionnaires and project analysis. I draw on the work of Jackson (1974) to justify my leaning towards a naturalistic rather than a psychometric research methodology. I also defend my position on the absence of a formal research hypothesis by referring to Jackson (1974) and Cronbach (1982). The chapter concludes with an affirmation of the inherent subjectivity of research methodologies that include case studies.

Chapter 6 is an analysis of an exemplar of CASS practice. In the leading section of this chapter I broadly describe the scope of the project in the exemplar, including a week by week description of the project at the level of its surface structure. This is developed into a contextual analysis of the deep structure of the Design and Technology exemplar in terms of CASS as a form of regulated pedagogical practise. My analysis draws on Bernstein's (1975) notion of classification and frame and his codes model of curriculum. I use them to develop an argument for regulated CASS practise in a critical assessment environment. I show that these concepts are indispensable to an understanding of such practise.

Chapter 7 contains the concluding remarks to the report. It is followed by a list of the references used in the construction of the report.

Chapter 2

The Official Position

Introduction

The overarching principle of the process of change that has been labelled a "complete paradigm shift" (NDE: 1997a, 20) in South African education today, is lifelong learning. The vision of lifelong learning is to bring about

> opportunities ... to learn regardless of age, circumstances and the level of education and training ... to learn on an on-going basis (EIC: 1996, 6)

From beneath the umbrella vision of lifelong learning, the National Qualifications Framework (NQF), the Curriculum Framework (CF) and Outcomes Based Education (OBE) provide the mechanisms required for its realisation through the education system. The NQF, the CF and OBE have been constructed as the enabling policies that empower the actors within the education system to respond to the vision of lifelong learning. CASS is the means by which learners are assessed in terms of these policies.

The aim in this chapter is to examine emergent State policy on CASS. It also offers some observations and critiques that pave the way towards a theoretical stance on curriculum generally and on CASS specifically (This stance is fully explicated in Chapter 4). Furthermore, this section offers a policy background for the

development of a conceptual account of a CASS exemplar, that is developed in Chapter 6. Of course, as Stenhouse accurately observes,

> Definitions of the word curriculum do not solve curricular problems; but they do suggest perspectives from which to view them. (1975, 1)

I believe that the perspective from which one views a matter, is paramount to a clear understanding of the issue under investigation. In this work I direct considerable attention to the clarification of those areas that I see as informing the nature of the view that enables a CASS approach. The curricular problem of CASS is considered here in terms of current official policy as located within the broader context of lifelong learning, the NQF, the CF and OBE. From this, a conception of CASS is implicitly developed and made substantive through the course of this report.

This chapter then, offers a descriptive analysis that moves from the broad general context, to the specific context of implementation or enactment, in an attempt to capture the essence of the official stance on CASS. Although the analysis that follows may create the impression of the existence of a ranked hierarchy (NQF → OBE → CASS), the picture is in reality a triptych: there is movement between these levels and they mutually influence one another (Ministerial Committee: 1996, 50a). As a result of this interactivity, no one level is perfectly meaningful in isolation from the others.

Three Core Principles: The Foundation of Educational Renewal

Practice in CASS, it is assumed in this paper, is an effort by educators to enact an alternative mode of assessment. This alternative mode is both required in terms of, and informed by, the NQF, the CF and more specifically, OBE. Due consideration of the official policy on CASS is of crucial relevance to any meaningful interpretation of practice. Although this component of the research is presented in some isolation, the intention is not to create the impression that policy is in some way inimical to, or separate from practice. On the contrary. This paper subscribes to the view that "social theory is interconnected with social practice" (Fay: 1975, 94), a notion that I develop more fully in the Conceptual Framework in Chapter 4. The aim here is to contextualise CASS so that the reader can grasp in a general sense how it transpired that CASS came to be a component of the new assessment scenario in South African schools.

The historical antecedents of the NQF comprise a variety of sources. These include the 1995 White Paper, the South African Qualifications Act (SAQA) and the Interim Guidelines for a National Basic Educational Training Framework (Ministerial Committee: 1996, 47). The imperative of renewal in South African education is articulated in the NQF, which was a response to the perceived need for a more equitable and user-friendly system of education and training (Human Sciences Research Council (HSRC): 1995, 6). In terms of the legacy of Apartheid education, this is

considered to be a self-evident need that is secured by policies of educational renewal. In this regard the NQF provides for a unitary system of education and training that allows for, organises and accredits a plurality of types of learning (Gauteng Department of Education (GDE): 1997b, 2).

The essential ideas that underpin the trinity of educational renewal in South Africa *viz.* NQF, CF and OBE, have been spelled out in a number of publications (*e.g.* HSRC: 1995, 11; Education Information Centre (EIC): 1996, 15 - 21). These ideas are expressed in the manifold principles of the NQF. For CASS and for this work, the most important of these principles are legitimacy, integration and flexibility. The cohesion of the research and interpretations in this report is partially conceptually situated in terms of these principles, hence their explication below. Furthermore, an understanding of these principles helps to generate a more coherent understanding of the NQF as well as of the essential features of CASS, as I will show in the remainder of this chapter.

The first principle, **legitimacy**, takes on a macro-level applicability in terms of the NQF (EIC: 1996, 15), in that it refers to the wide range of participants in the total areas of learning. This means that it functions to confirm the inclusive and participatory nature of the NQF. I attribute two further components to the principle of legitimacy in this report, as I explain below.

Firstly, I see legitimacy as subsuming the NQF principles of democratic participation, relevance, credibility, quality and equality of opportunity, since in the absence of any one of these principles, legitimacy is not fully practicable. Secondly, legitimacy refers in this work more especially to the nature of the interaction between learner and educator at the site of delivery. It is thus more focused than the NQF vision of all people involved at every level of the educational process *i.e.* systemic legitimacy. For CASS, this implies transparency of the assessment process. That is to say, the assessment process is legitimate only in so far as it is transparent with respect to all concerned parties *e.g.* learners and their parents. Transparency impacts on elements such as the educator's method of according marks to learners' work (marks are accorded for specified criteria) and it also extends to record keeping (in that the traditional concealment and mystery surrounding mark schedules is challenged by the principle of legitimacy) and reporting (it is clear what it is that is being reported on) and so on (*cf.* NDE: 1996b, 51-7).

My emphasis on the nature of legitimate learner-educator interaction also has ramifications for CASS as a component of school-based curriculum development. CASS enables democratic participation, an important principle subsumed by legitimacy in that it not only allows for but encourages such school-based curriculum development. The reduction of bureaucratic restrictions

placed upon learner and educator in a CASS approach, thus makes provision for ongoing development of assessment applications at the site of learning by educational practitioners themselves.

In terms of ongoing school-based curriculum development, CASS is practised and refined in a self-perpetuating process, contributing to curriculum development at the location of curricular activity. Systemic legitimacy is also enhanced by this type of localised curriculum initiative. Hence the rendering here of legitimacy as an essential principle informing CASS and that is in turn perpetuated by CASS.

The second principle is that of **integration**. Integration, as seen in the NQF, refers more specifically to the integration of education and training (EIC: 1996, 15; GDE: 1997b, 2). This means that previously separate areas of learning become synthesised into a blend that makes for portability of skills and knowledge between levels of learning and sites of learning. There are three additional areas of meaning that I attach to integration for the purposes of this report.

Firstly, the principle of integration incorporates the NQF principles of coherence, recognition of prior learning and guidance of learners. Integration thus implies a centripetally encompassing perspective, in which real life experience is integrated with academic knowledge. Secondly, integration here refers to the ways in which the educator can make a subject

discipline or disciplines ancillary to some connecting theme. This idea of integration is an element of the notion of "integrated codes" (Bernstein: 1975, 93), upon which I elaborate on Chapters 4 and 6, using Bernstein's notions of classification and frame.

Bernstein describes two antagonistic modes of curriculum practice in his codes model. He sees collection codes as characterised by a rigidly differentiated and hierarchical instructional environment (99). The form of assessment that is concomitant with such a system emphasises "*states* of knowledge rather than *ways* of knowing" (98). He goes on to argue that integrated codes on the other hand, constitute an alternative mode, with a contrasting set of implications for curriculum, pedagogy and evaluation. All three sets of implications have relevance for CASS and I highlight them here because Bernstein's observations are of definitional importance for CASS.

For curriculum, an integrated code implies "content openness" (101), characterised by a reduction in the degree of insulation between the areas of learning. For pedagogy, it implies "a shift in the balance of power, in the pedagogical relationship between the teacher and taught" (101), in favour of the learner. For evaluation, Bernstein observes that "it is likely that integrated codes will give rise to multiple criteria of assessment" (108). In Chapter 4 I examine the official position on CASS from within the perspective of these three qualities of an integrated code.

The third element that I add to the NQF conception of integration is that it entails the integration of assessment and learning. By this I mean that assessment in CASS takes place as part of the learning process, not as an act that occurs after learning to ascertain the extent to which learning has in fact occurred. It can thus also be said to have a strongly formative component.

The notion of **flexibility** is the third principle that is critical to the view of CASS in this report. For the NQF, flexibility refers to "different routes which lead to the same educational ends" (RIC: 1996, 17). Here, the maxim of flexibility is read such that it embodies the NQF principles of access, progression, portability and articulation. Again, the implications are of a broad societal nature, emphasising plurality of approach in a democratic environment. Learning programmes, mode of delivery and sites of learning are pluralised in order to increase the flexibility of the system. This has important democratising implications in that it enables greater access to educational opportunity for a greater number and variety of learners. The specific significance of flexibility for this work however, is of a practical nature and applies specifically within the learning space where CASS is in fact performed.

For CASS, flexibility is taken to imply a flexible range of assessment options open to both learner and educator. This means that the traditional closed system of near exclusive summative assessment is open to creative alternatives. A variety of options

such as peer and self assessment and portfolio assessment as well as traditional testing becomes available. The scope of the educator's assessment repertoire is considerably widened by the application of the principle of flexibility. I deliberate on the notion of flexibility more fully in Chapter 4, where I specifically reflect on the notion of the limits and boundaries of this flexibility.

Towards Application of the Core Principles: From National Qualifications Framework to Curriculum Framework

The three core principles illuminated above - legitimacy, integration and flexibility - form a virtual pivot around which I investigate CASS throughout this research. I use the notion of legitimacy to understand the social relations of power that define the interactions between educators and the state and between learners and educators. This understanding is reflected in my argument around school-based curriculum development and the educator as a research professional. I apply integration as an instrument with which to understand the relations between school subjects, and between school knowledge and everyday knowledge. It is an idea that I discuss in my position on authentic assessment and I support it with Bernstein's notion of classification. Flexibility is the tool I use to discuss the regulatory role of the educator in instruction and in integrating learning and assessment. I develop the idea of regulated practices from within Bernstein's analysis of framing of educational knowledge.

The CF is the conceptual mechanism by which the NQF is realised. Although the CF does not overtly endorse the principles of legitimacy, integration and flexibility in the way that the NQF does, they form a point of departure in this report for an understanding of the way in which the NQF principles are applied by means of the CF. As such, the CF has been described as a

> set of principles and guidelines ... for curriculum development initiatives at all levels. (GDE: 1997b, 5)

The National Department of Education (NDE) points out that

> the suggestions contained within [the CF] ... are set within the context of the NQF and broad education policy as contained in the White Paper. (1996a, 5)

The principles that I have proffered above thus inform the nature of the NQF/OBE/CASS triptych.

A concept of central importance to the architects of the new education is that it is

> a shift from the traditional aims-and-objectives approach to outcomes-based education. (NDE: 1997a, i)

This implies that education policy now allows for a pluralism of methods, materials and activities that lead to the attainment of these outcomes. In terms of the CF, the approach to assessment too, must be outcomes-based. The NDE in turn confirms that assessment

> must support the approach to teaching and learning contained within [the CF]. (NDE: 1996a, 20)

Indeed, it is the CF that provides the outline of the approach to, and implications of, assessment within the new order (NDE: 1996a, 19-24). This assessment exists in a relationship of reciprocal interaction with outcomes and methodology (GDE: 1997c, 5). That is to say, assessment, educational outcomes and teaching methodology are not independent of one another; rather, each has a determining influence upon the other. This idea confirms the principle of integration inherent in the CF at the level of its broader educational perspective.

The vision of assessment embraced by the NQF is that

> In order to achieve a qualification, learners must undergo a final, integrative assessment. (HSRC: 1995, 18)

Furthermore, the NQF specifies two essential components of assessment *viz.* criteria and outcomes (HSRC: 1995, 18). These elements must then be essential to the nature of any CASS that takes place in the classroom context. The principles of integration (located primarily in the nature of the final assessment), legitimacy (located primarily in the transparency of the criteria) and flexibility (located primarily in the outcomes-based nature of assessment) within the NQF is thus clear. The outcomes-based nature of learning implies that the function of assessment is to assess the extent to which explicit criteria have been met. For the NDE

> a key role of assessment … is determining whether or not these outcomes have been attained. (NDE: 1996a, 20)

CASS, in its embracing of the core principles of legitimacy,

integration and flexibility as elucidated in this chapter, is the most significant of the instruments by which this function of the CF and OBE is enacted.

The Core Principles and the National Department of Education

The first clear decision that CASS would be a component of the new assessment was made outside of the formal structures of education. It was the ANC that endorsed the move as part of the process of socio-political restructuring. They concluded that

> Assessment and evaluation practices will be based on a combination of CASS ... as well as national examinations.
>
> (ANC: 1995, 75)

At the time of this observation, no thorough account of CASS was given, nor of detail such as the ratio of CASS to end-of-phase assessment and so on. They described CASS simply as "tests, essays, projects, practical and field studies" (75). One thing was clear though, the practice of awarding a matriculation certificate based on terminal or summative assessment alone, was soon to be obsolete.

The political decision having being made, work started on the development of an assessment policy document, which is essentially an overview of how new policies impact on assessment and how assessment can be used as a tool in the realisation of lifelong learning and the implementation of the NQF (NDE: 1996b, Executive Summary). Simultaneous with the development of the Draft

Recommendations was the commencement of work on the CF, which is a set of principles that provides a background and structure through which pedagogical instruments, including CASS instruments, can be generated to make the implementation of lifelong learning feasible (NDE: 1996a, 5).

The NDE's Draft Recommendations for the Development and Implementation of Assessment Policy (1996b) is a policy discussion document for assessment. I focus here on elements that have direct relevance to CASS, and show how the core principles that I have identified as underpinning national assessment development, *viz.* legitimacy, integration and flexibility inform these elements.

The most important of the recommendations on systems of assessment as I see it are those on formative and summative assessment, record-keeping and reporting. In a development of the position of the ANC (1975, 75), the NDE suggests:

> there are three distinct but overlapping elements of a coherent system for the assessment of learners … [*viz.*] formal summative assessment … on-going formal continuous assessment … [and] on-going informal formative assessment.
>
> (1996b, 52-53)

From this observation one notes that whilst CASS is an important pillar that supports the global approach to assessment, there remains room for the poles of formal summative and informal formative assessment thereby confirming the underlying principle of systemic flexibility.

The NDE vision of CASS is that it

> provides for a variety of ways to demonstrate competence across a range of contexts; ... they should be based on interesting and demanding tasks which motivate and support learning. (52)

Two issues stand out in this view. Firstly, it is clearly subject to explanation in terms of the core principles: the insistence on variety that is implicit in this vision of CASS once again subordinates the NDE's view to the principle of legitimacy and flexibility. The idea of assessment tasks that support learning confirms the principle of integration. This notion of learning as a component of assessment has not yet been fully explained or implemented in South Africa. I consider and address this dearth more fully in Chapter 3.

Following on the international perspective, the research in this report regards the idea of developmental assessment, in which learning and assessment are tightly integrated, as related to that of "authentic assessment" (*cf.* Berlak: 1992; Goodman *et al*: 1992; Hart: 1994; Hill and Ruptic: 1994; Kohn: 1994; Newmann, Secada and Wehlage: 1995; Stiggins: 1991 and 1994; Wiggins: 1992 and 1993). Authentic assessment could be a tool of deciding import to CASS and it is placed at the disposal of educators in secondary schools in terms of the flexibility of CASS policy. I investigate the set of educational values that the notion of authentic assessment holds for CASS in Chapter 3. Related areas that I include under

the general banner of authentic assessment are alternative assessment, performance assessment and portfolio assessment (*cf.* Belanoff and Dickson: 1991; Darling-Hammond: 1993; DeFina: 1992; Farr: 1994; Grosvenor *et al*: 1993; Jasmine: 1992 and 1993; and many others).

Developmental assessment, authentic assessment and alternative assessment are critical to any meaningful implementation of CASS and room is made for their inclusion in practice through the NDE's assertion that

> no single assessment method could do justice to the diversity of learners. (1996b, 51)

This point is verified by John Mathfield, of the Technical Committee of the SAQA. He points out that under a system of CASS

> pupils would be assessed on their portfolios, self and peer assessment, projects and a range of other methods. (Naidu: 1997, 11)

Such absence of specific, systematic detail can be interpreted by educators as an opportunity to develop systems appropriate to their educational context at micro-level. Even informal observation of practice shows that educators can be locked into a mindset of oligarchic prescription of every facet of classroom practice (Parker: 1997), hence the current tendency towards hesitation and trepidation when one raises the issue of CASS with some educators (*cf.* Le Grange and Reddy: 1998, 1). In regard to this dichotomy between innovation and confusion: on the one hand the absence of specific instructions opens the assessment

environment to variety within the guidance of the principles of legitimacy, integration and flexibility. On the other hand there exists concomitant with such openness the danger of being vague and directionless, with a potential for imprecise, nebulous efforts at CASS implementation. There is thus a need to give guidance to the core principles to ensure their orderly and educationally meaningful enactment. I revisit what I see as a need for parameters and boundaries in more detail in Chapter 6.

The development of appropriate systems by educators means that an opportunity for school-based curriculum development is on offer. Bengu's observation that

> curriculum development is a task of teachers at the site of delivery (1997)

is useful to educators that demand such increased autonomy. The increased legitimacy and variety that accompanies this autonomy in turn implies a shift in the status of the professionalism of the educator. I explain this shift with reference to Stenhouse's (1975) model of the educator as a research professional in the analysis of an exemplar of CASS practice in Chapter 6. Such weakening of the restrictive frame that traditionally shrouded assessment practice in South Africa, brings with it the language of possibility for the inclusion of innovations such as self and peer assessment as well as new and interesting methods such as portfolio and performance assessment (NDE: 1997b, 12). In terms of the principle of flexibility, this multiplicity of options also summons an important conceptual contribution to the paradigm shift

in assessment. Portfolios, performance tasks, projects and the like, invoke fresh possibilities for the means open to educators to assess learners.

Definitions of portfolio and performance assessment abound. In order to quell potential confusion therefore, I draw on definitions here that effectively capture my own understanding of these notions as I use them in this report. Performance assessment

> involves displaying one's knowledge effectively to bring to fruition a complex product or event. Performance assessments typically involve the creation of products.(Aurbach: 1993, 2)

An example of a performance task could be the creation of a model to demonstrate understanding of a gra[illegible]ical concept such as perspective. Portfolios have been described as

> a purposeful collection of student work that exhibits the student's efforts, progress and achievements in one or more areas. The collection must include student participation in selecting the contents, the criteria for selection, the criteria for judging merit and evidence of student self reflection. (Aurbach: 1993, 2)

The word, "purposeful", is important in that it implies that a portfolio is not simply a collection of every item that the learner has produced over a given period. It really means that the learner, possibly in conjunction with educators or peers, selects items that are a meaningful reflection of his or her scholastic effort. The core principles of legitimacy, integration and flexibility are strikingly extant in these definitions. So too is

their immediate closeness with the performance based nature of OBE, making them particularly germane to the understanding assessment in the NDE.

Of even greater significance than alternative assessment *means* however, is the potential contribution of alternative assessment *modes*. Self and peer assessment constitute a shift not only in the means of assessment but also the mode of assessment. Self and peer assessment imply a shift in the locus of the assessing authority thereby enabling learners to take responsibility for their own grades and even ultimately invites a shift from an external to an internal locus of control in the learner: the balance of power shifts in an educationally meaningful way. Again, there is concurrence with the core principle of legitimacy.

In self assessment the learner is encouraged to develop into a reflective practitioner with the ability to learn from his or her own work by reflecting critically upon it. Self assessment as a mode of assessment can be applied to a means of assessment such as a performance task resulting in integration at the level of curriculum, pedagogy and evaluation simultaneously. Peer assessment allows for a similar restructuring of the boundary between authority and autonomy in the curriculum process. Where self assessment allows for critical self-reflection, peer assessment facilitates critical interaction between learners and their social context. It allows for the learner to engage with an audience, making for greater authenticity of the learning context

(NDE: 1996b, 61). The legitimacy and integrative nature of the new assessment practice is enhanced by these elements of CASS.

The Core Principles and Specific Strategies for Intervention in the National Department of Education

The actual assessment strategies recommended by the NDE that have a significant bearing on CASS include recognition of prior learning, formative assessment, differentiation, criteria, group work, self and peer assessment, the use of portfolios, process assessment, and marking and feedback. There is congruity between the general principles of assessment and the specific proposed strategies of assessment at the level of national policy. The discussion that follows shows that the principles of legitimacy, integration and flexibility are basic to the NDE proposed strategies.

Recognition of prior learning implies differentiation of assessment programmes according to the level of competence of the learner, thereby appealing to the core principle of flexibility. The NDE observes that learners bring a range of expertise to the classroom, yet are often required to learn at a single, pre-determined pace. Recognition of prior learning counters this by allowing for "differentiated programmes" (1996b, 58) allowing a learner to leave school "with a range of levels of formal credits" (58).

Formative assessment stresses the use of learning in assessment. It is related to CASS in two main ways, in the view of the NDE. Firstly, it helps learners to be aware of their own progress, which makes them more able to determine their future performance and enhances the legitimacy of the assessment practice. Secondly, it enables educators to become aware of the needs of learners which enables them to distinguish between the various levels of learners in the classroom at any one time, hence the policy of differentiation which inform the principle of flexibility in the assessment approach.

The strategy of criteria for assessment implies more than the mere use of criteria. It extends to the establishment of clear and transparent criteria that every learner is familiar with. The implication of open criteria is that the learner becomes aware of what he or she has to do to improve his or her performance. The idea of transparency that accompanies the use of assessment open criteria is closely connected to the principle of legitimacy.

Group work assessment is another of the NDE strategies founded on the existence of differentiation in classes of mixed ability. The NDE recommends a strategy of providing individual assessment tasks that are "constructed in such a way that each student has a specific role and the task demands that each role be fulfilled" (60). This means that collaboration and participation is assessed, rather than penalised, which sanctions a more yielding assessment milieu thereby invoking the principle of flexibility.

Self assessment urges students to indulge in "reflection and self-evaluation" (60), particularly when they are required to select their best work. Self assessment can be successfully utilised with struggling students where teacher and learner together construct progress reports. Peer assessment is often the forerunner to self assessment, in that it "helps students to develop the skills they need to assess their own progress" (61). The NDE claims that the "success of mixed ability teaching ... is partly dependant on this approach" (61) thus linking it with the strategies of differentiation and recognition of prior learning. Peer assessment in the classroom can be seen as extension of the normal feedback that one colleague would offer to another in the workplace. It can thus also assist in the promotion of authenticity. The principle of legitimacy is fulfilled by self and peer assessment.

The recommendation that there be process assessment is similar to the established view that teachers ought to concentrate more closely on process than on product. The NDE explains that "if a satisfactory answer is not forthcoming, but a suitable process was followed nine-tenths of the way to the solution, it is possible to award nine-out-of-ten" (61). As far as possible, learners should be required to show process in their work and this should be facilitated by teachers setting tasks that enable them to do so. Such fusion of learning with assessment engages the principle of integration as it is understood in this report.

The NDE argues that marking and feedback is "possibly the most significant facet of the new assessment paradigm in practice" (62). The new paradigm rejects the practice of correcting every mistake and deducting a mark for it. So too is the simple award of a mark without comment about how the work could have been improved, unacceptable in the new recommended strategy. They suggest that teachers should rather mark a single piece of work in this manner than mark several pieces in a superficial way. Detailed feedback allows for "error analysis" (63) which means that the teacher can then focus on a group of related errors during remediation. It is recommended that teachers avoid punitive rewriting. Rather, learners redraft with "positive incentive" (63) such as publication within the school context. The NDE recommends the practice of combining examination results with the results of formative assessment for each student (55). The aim should be to build up an extensive reportback file, maintained partially by the learner and partially by the teacher with the ultimate goal of making students "more aware of their own progress" (56) and ensuring "balanced systems of assessment" (56). The transparency of the assessment procedures is enhanced and the principle of legitimacy is further satisfied under such conditions.

Towards the Clarification of Policy in the National Department of Education

As its title indicates, the National policy document is still in draft form. As such there is a need for the interpretation and

development of the ideas and proposals contained within it. A more recent construct around the assessment vision of the NDE is contained in the brief section on assessment in Curriculum 2005 Lifelong Learning for the 21st Century A User's Guide (1997b). The section on assessment in this document forms a potted summary of the National Draft Recommendations as well as a show of commitment to fundamental issues on assessment that has hitherto not been readily forthcoming in the official documentation. The tentative and suggestive character of the Draft Policy is less pervasive in the user's guide and the reader is offered a subtext of greater directional certainty. The relevant section reads as follows:

> The practice of continuous assessment will underpin all assessment … Recorded evidence on the learner's progressive achievement will include portfolios of the learners work, as well as documented records of the teacher's appraisals, both verbal and scored on which promotion decisions will be made. All assessment will be underpinned by the criteria of the critical and specific learning outcomes. The emphasis of assessment will thus be placed on formative assessment of the learners work over a period of time, rather than on performance in a once-off achievement-based examination.
>
> It is vital that teachers should not merely interpret CASS as being the cumulation of a series of traditional test results. Assessment should, however, be aimed at knowledge, skills and attitudes. (12)

This shows that the recommendations of the official national draft policy have gained ascendancy in Curriculum 2005, and can

therefore be applied at the site of instruction. Most importantly for this research report, it corroborates the value of the core principles of legitimacy, integration and flexibility in the interpretation of NDE policy.

The user's guide includes a list of possible assessment methods that can be used in conjunction with CASS. Although these suggestions are not accompanied by explanations of what is meant by each method, the point that comes across clearly is a reinforcement of the emphasis on a multiplicity of assessment approaches. The following are included:

- Continuous (formative) assessment
- Diagnostic assessment
- Achievement-based assessment
- Self assessment
- Peer assessment
- Portfolio assessment
- Performance assessment
- Observation Sheets
- Journals
- Teacher made tests
- Assessment of Prior Learning. (12)

I submit that the suggestions offered in the form of national policy give sufficient direction for meaningful interpretation, development and application at the level of provincial departments of education. A stronger sense of certitude in the national policy

documentation would, in my view, lessen the impact of the core principles, in that legitimacy, integration and flexibility rely significantly on the professionalism of educators to determine the exact nature of the assessment procedures appropriate to their conditions of practice.

The Core Principles and the Gauteng Department of Education: An Exemplar of Local Implementation of National Policy

I now shift the focus, as part of a progression from the general to the specific, from policy *per se* to policy implementation.

The exemplar of practice that I examine in Chapter 6 is located in a GDE secondary school and the specific focus in this section is therefore on how the GDE has gone about the implementation of CASS. The GDE is the structure through which national policy is interpreted and implemented in Gauteng schools. It should not be concluded however, that the GDE is the only educational structure that holds these views on CASS, or that similar responses to national policy have not been made by other provincial departments of education.

The scarcity of departmentally imposed parameters on CASS principles is conspicuous in the GDE. One can conclude from the list below that the openness contained in national policy has been transferred to the level of the individual educator. For the GDE, CASS is characterised by:

a range of varied assessment techniques

completion of various tasks by learners

a modular approach

a balanced usage of various assessment techniques

formal and informal tasks

group and individual work

multi-modal presentations - (oral, drama, graphic, written)

allocating marks / symbols to learners at various points of the learning programme

tasks that reflect congruer e with the learning programme

a relaxed assessment environment

it has both formative and summative elements

interaction between the learner and the facilitator

(GDE: 1996c, 2-3)

This list cannot be intended as an all encompassing taxonomy, as the dynamic state of educational practice implied by CASS renders such a reductionist mode illegitimate. Furthermore, the individual characteristics themselves are open to interpretation. The variety and nature of the attributes of CASS listed by the GDE confirms the principles of legitimacy, integration and flexibility at provincial level. The integrity of the core principles is thus retained from NDE to GDE.

The Gauteng Head of Education, James Maseko, implemented CASS as Provincial policy on 18 March 1996. The following extract from Circular No. 10/96 catalogues the departmental CASS requirements at the level of schools and educators in Gauteng:

8.1. The final mark will be a combination of marks obtained in the Final Examination and marks obtained through a process of Continuous Assessment.

8.2. The average balance is 75% marks from the Final Examination and 25% from Continuous Assessment.

8.3. The implementation of Continuous Assessment thus nullifies the need for any full-scale, formal, school based examination to generate a "year mark".

8.4. Continuous Assessment will run from 23 July 1996 to 27 September 1996. The moderation of the continuous assessment process and the marks resulting therefrom will itself be a continuous process that will involve random sampling of various aspects of the Continuous Assessment Mark.

8.5. A feature of the process is that a variety of assessment techniques needs to be used e.g. projects, assignments, action research, class-tests etc.

8.6. Specific workshops on Continuous Assessment will be conducted with teachers between 16 April 1996 and 28 June 1996. A structured, systematic, uniform process (taking cognisance of the particular nuances of different subjects) will be addressed. (GDE: 1996a, 5)

Despite its tone of clarity and precision, the circular does not offer any detailed analysis of CASS at the level of meaning and implementation. The only tangible guidance to the educator who had no clear understanding as to what CASS meant is 8.5. above: "projects, assignments, action research, class-tests etc". It seems intentionally broadly circumscribed, perhaps to provide

scope for interpretation, or to appear less intimidating. The result was, however, a general state of bewilderment among educators. This confusion has the potential to impede assessment innovation.

The GDE held a workshop on CASS on 26 March 1996 at Johannesburg College of Education in an attempt to rectify what has been referred to as the "complex and confusing situation ... in many schools" (Le Grange & Reddy: 1998, 2). The objectives of the workshop were

> 1.1.To enable participants to facilitate training, and development of District based CASS Teams.
>
> 1.2. To promote consensus of understanding about the Policy and Implementation of CASS in relation to the Std 10 examination for 1996.
>
> 1.3. To arrive at a planning framework that will facilitate district based programmes aimed at enabling teachers and learners to participate meaningfully in CASS process.
>
> (GDE: 1996c, 2)

Despite the obviously meritorious intent and the appeal to the principle of legitimacy of the workshop, these objectives were not met. The workshop was intended to train the trainers, but this did not materialise.

Maseko then informed Gauteng schools that the CASS objectives could not be met with respect to the matriculation examination. He announced that "CASS marks will not be used in the 1996 Std 10

examination" (GDE: 1996b, 2). The reasons given were as follows:

> 1.2.1.The GDE experienced a lack of appropriate personnel in the Teaching and Learning services to facilitate the timeous training of Std 10 teachers to conduct Continuous Assessment.
>
> 1.2.2. Many schools still had large sections of the syllabus to cover and the time taken to implement CASS at this stage would further impede completion of the syllabus
>
> 1.2.3. Learners in Std 10 and their teachers were also faced with familiarising themselves with changes to the pattern of papers and types of questions that would be encountered in the 1996 Std 10 Examinations
>
> 1.2.4. The standardisation, validation, statistical procedures, monitoring and moderation of Continuous Assessment marks involved more material and human resources than was readily available. (GDE: 1996b, 2)

He made it clear however, that all was not lost and that

> preparation for the implementation of CASS with learners who are most likely to be in Std 10 during 1997 will start immediately. (GDE: 1996b, 4)

Thus, although the CASS roller coaster did nothing to stem uncertainty in schools, the intention was that gains in other grades would be preserved.

This intention was soon thereafter repudiated to an extent with the following directive:

> Although CASS was to have been implemented fully in matric this year it has to be shelved for 1997 since adequate

> planning and personnel training has not occurred. It will therefore not be used as part of the final mark for this year, but will be taken up in earnest as from 1998. However school [*sic.*] are encouraged to introduce or further develop CASS in all other grades. (GDE: 1997a, 2)

This circular takes the issue back to the date for implementation that was mooted by the NDE in their original recommendation.

In 1998, no further official communication on CASS came through to schools. In 1999, the GDE (1999) has recommenced the process of implementation of CASS, with the incorporation of the year mark into the final assessment mark.

Conclusion

This chapter performs three main functions. Firstly, it locates CASS within a context of regeneration of assessment policy and practise that is driven by the core principles of legitimacy, integration and flexibility. Secondly, it describes the national policy on CASS in terms of its potential for pedagogical innovation and research based professionalism. One of the main thrusts of this report as a whole is the repositioning of the professional role of the educator. Thirdly, it traces the difficulty for educators given the unsystematic way in which the shift from policy to implementation (from NDE to GDE) has taken place. In my description of implementation by the GDE, I show that innovation and confusion have unwittingly become analogous.

From within this context, this report as a whole, leads up to an analysis of how a GDE secondary school has drawn on a combination of official documentation and directives with their own insight and the experience of colleagues elsewhere, to develop a CASS pilot in preparation for a substantive step (or not) by the GDE in the actual implementation of CASS. It offers a descriptive analysis of how some of these educators are enacting CASS in terms of the reciprocal interaction between policy, context and practise.

In the next chapter, I locate the South African official position within the global context of continuous assessment. This broader perspective depicts how CASS has been implemented in England and the United States. I place these international cases against a South African view on implementation, making certain parallels evident. These illustrative cases serve to demonstrate the way in which the core principles of legitimacy, integration and flexibility, as I have described them in this chapter, come into play in the international CASS panorama.

Chapter 3

Literature Review Part 1

A Synopsis of Selected International Experience

Introduction

No national system, be it education or other, can be fully conceptualised or realised in a vacuum divorced from the experience of its wider community of practitioners. This is especially true of the national assessment recommendations that have been mooted for South Africa. Issues in scholastic assessment have been debated for probably as long as there has been a system of organised education. Many talk today of pencil-and-paper tests as traditional assessment and CASS as alternative assessment. However, an examination of the literature that documents this controversy, shows that it is a debate that has been taking place for many years.

Brereton for example, argues his case for examinations as early as 1944, when he perceived alternative assessment as gaining ground on traditional methods. He was not happy with this state of affairs, arguing that

> it has become fashionable to disapprove of examinations as a means of stimulating effort in children; to regard their influence on school work as necessarily vicious ... This fashion is unfortunate. Examinations fulfil a double function

- they are a mobilising force in education, and they provide a means of testing its results. (1)

The debate between traditional and alternative assessment is widespread and unresolved (*cf.* Elley and Livingstone, 1972; Hargreaves, 1989; Maeroff, 1991; Spencer, 1979; Young, 1970).

South African education is inextricably part of the international debate and the assessment approach that we now find ourselves part of, is partially influenced by it. It is this broader context that enables us to position ourselves in a meaningful way in our own, local context: by appropriating parts of some arguments and rejecting others, we arrive at a new paradigm that is not merely an eclectic concoction of that which has gone before but an approach that is meaningfully derived from a global epistemological heritage that is made up of the successes and failures of others elsewhere throughout history.

In this light I consider the successful approaches to CASS in England and Wales and the United States. Where appropriate, I highlight certain parallels with the South African context. The reader should note that the experiences documented below are essentially successful adventures with CASS - I make no pretence that they collectively capture the scope of the international CASS experience. The scope of this report precludes discussion of the tensions that assessment reform has created in some instances. I do, however, briefly document the work of Putland (1991) in order to illustrate this tension.

Case 1: England and Wales

An official study was commissioned in England and Wales as a result of the problems created for learners when they are required to condense several years' study and learning into a relatively brief series of terminal examinations (Hoste and Bloomfield: 1975, 9). The solution, for England and Wales lies in a system of continuous assessment, despite the criticism from some teachers that "the cure might be worse than the disease" (9).

In Continuous Assessment in the CSE (1975), Hoste and Bloomfield present a descriptive report in which they document the nature of CASS based on observation of practice and the views of practitioners. For the purpose of their report, they define CASS as

> the systematic collection of marks or grades. These marks may be awarded for classwork, homework, practical or oral work, by the use of objective test or essay-type examinations or by the subjective judgement of the teacher ... The essence of continuous assessment is that it is a cumulative process, developing as the pupil develops. (1)

Two elements are thus paramount to the way they see CASS. Firstly there is aggregation of marks over time *i.e.* marks for different pieces of work over a period of time are considered jointly for the award of a CASS mark. More importantly, this aggregation or accumulation of marks is part of the developmental process of the

learner (giving it bearing on the notion of learning in assessment that I raised in Chapter 2).

The second basic element of CASS in England and Wales is the existence of multiple assessment procedures. This important element is corroborated by other writers on English CASS practice (*e.g.* Satterly: 1989, 51 and Munby *et al*: 1989, 50). Such multiple assessment procedures can be considered, according to Hoste and Bloomfield, to fall into two main spheres: assessment that is part of the learning process and assessment that is separate from the learning process. Assessment that is part of the learning process is referred to as "learning experience assessment" (19) and can take place either formally or informally. Learning experience assessment is task-based and as such it is comparable with the notion of performance assessment. Such assessment is also formative in nature in that learning and assessment take place simultaneously as integrated, symbiotic components of a parallel process. The second sphere is that in which learning is assessed separately from the learning process and is referred to as "special assessments" (20). This refers to the type of testing that occurs at the end of a period of instruction to see how well a topic has been learnt (20). It is characterised by formal examinations and tests of a summative nature, usually taking place at the end of a phase of instruction.

Hoste and Bloomfield note that a CASS scheme "may contain both of these categories of assessment" (20). In other words, CASS does

not necessarily exclude a summative assessment component. As such, a complete CASS scheme can include coursework, periodic tests, project work, field work, practical work, oral work and final examinations (134-137). The English expression of CASS implies a global assessment form that includes formative and summative assessment, informal and formal assessment. This can be compared with the South African vision in which CASS is just one of the elements that make up global assessment and is seen and understood in conjunction with two further pillars upon which the complete assessment design is based *viz.* "formal summative assessment and informal formative assessment" (NDE: 1996b, 52-53).

They point out however, in a criticism of excessive emphasis on summative assessment, that summative assessment can have a negative influence on curriculum practice (34). The nature of the relationship between assessment practices and curriculum practices is very important for this report and I direct considerable attention at a discussion of it. When summative assessment impacts upon curriculum, it can result in what has been called teaching to the test or "undesirable examination backwash" (34), in that for some teachers the potential content of the final examination is one with the taught syllabus. Such loss of control of the syllabus has been described as "the price paid by teachers for delegating their assessing function" (34). It has been argued that CASS allows for a resolution to this problem in that the class teacher is the examiner and therefore there "can be no disagreement" (35) between the curriculum and the way in which it is assessed.

Hoste and Bloomfield propose that the relationship between assessment and curriculum be taken a step further than the conception of agreement or disagreement between learning and assessment. They observe that an increasing number of writers urge teachers not to capitulate on the soundness of assessment practices by teaching to the test as a mode of curriculum effort. What is required, they say, is an inversion of this mode, conceptually driven by "the need for curriculum to affect the assessment procedure" (35) *i.e.* it calls for a shift in our understanding of classroom practice and its relationship with assessment. In terms of this changed view, classroom practice should be a determining factor in assessment policy and procedure. This view is compatible with a critical view of the relationship between theory and practice such as that offered by Fay (1975). According to this view, assessment practice is not wholly dictated by curricular policy. Rather, practice and policy are seen as existing in a relationship of reciprocal interaction with each other.

By foregrounding the notion of curriculum practice as affecting the approach to assessment, I find support in the English version of CASS for the foundation upon which I build my conceptual understanding of CASS in Chapter 4. This includes the possibilities that it offers for the construction of knowledge at the site of instruction and the professional role of the educator in this process of construction.

Case 2: The United States of America

In the United States, assessment is the specific target area of what has been called

> a barrage of reform initiatives in schools throughout the country. (Soodak and Martin-Kniep: 1994, 183)

In this section, I briefly consider two assessment reform initiatives in the United States *viz.* the Kentucky Department of Education (KDE) as brought about by the Kentucky Education Reform Act (KERA) and the Vermont Department of Education CASS initiative. This section is concluded with an investigation into the most important features of American assessment reform in terms of an exemplar of CASS practice, the most important feature of which is the notion of authentic assessment.

The State of Kentucky

The Kentucky Education Association (KEA) points out that KERA is one of the most sweeping and systematic reform efforts ever attempted in the US (KEA: 1997, 1). On June 9, 1989, the Kentucky Supreme Court declared Kentucky's entire system of public elementary and secondary education unconstitutional. KERA brought about changes in every facet of the day to day running of schools, including finance, governance and curriculum. It is on the area of curriculum that the focus is placed in this brief outline. Curriculum changes in Kentucky involved changes in core content

and academic expectations, which together "provide the focus for all assessment items" (KDE: 1997c, 1). The way in which curriculum impacts upon assessment in the KDE is briefly outlined below.

The KDE asserts that the underlying purpose of student assessment is

> to ensure that schools are accountable for student achievement by establishing appropriate performance-based assessments that foster good instructional practice and provide parents and teachers with useful information. (1997d, 1)

The key issue that comes to the fore in this affirmation of policy aspiration is the integration of learning and assessment. Such integration is effected to the extent that assessments advance good teaching. In Kentucky, this integration is interwoven with CASS largely through portfolio assessment and particular emphasis has been placed on mathematics in the development of such a portfolio system (1997b, 1). The aim is to achieve a refined and revised Kentucky Mathematics Portfolio System by the 1998-1999 school year with a two-fold, integrative function (1997e, 3). In confirmation of broad KDE policy, the mathematics portfolio must not only be

> a quality assessment tool, but also a quality instruction tool. (1997e, 3)

There is a notable similarity between this aim of the Kentucky portfolio and the English notion of "learning experience assessment" (Hoste and Bloomfield: 1975, 19) in that both exhibit

the utilisation of CASS as an assessment instrument that functions to improve teaching and learning. I will show in Chapter 6 through the analysis of an exemplar of CASS practice, how this mode of assessment has been implemented in an effort to achieve such improvement.

In the KDE, the innovative character of CASS can best be described in terms of the core principles of legitimacy, flexibility and integration that I posited in Chapter 2. Firstly, legitimacy operates at two levels: a macro level through coming into line with the US constitution (KEA: 1997) and a micro level through accountability (KDE: 1997d, 1). Secondly, flexibility is overtly included in terms of meeting individual needs (KDE: 1997a, 1). Thirdly and most important for the conceptual understanding in this research, integration by the synthesis of learning and assessment (KDE: 1997e, 3).

As I have already suggested in this chapter and the previous one, the principle of integration aids in an understanding of the link between curriculum, pedagogy and assessment. This understanding in turn provides the basis for a view of CASS as a curriculum instrument that is enabling of a shift from the view of educators and learners as passive transmitters and recipients of educational knowledge respectively, to one of research participants in the process of the production of knowledge. I develop this view of curriculum in the second part of the literature review (Chapter 4) and show efforts to enact it in Chapter 6.

The State of Vermont

In Vermont, the drive for CASS originated in the education community itself, rather than in a judicial directive, as was the case in Kentucky. The Vermont Department of Education (VDE) clearly sets out their policy on assessment and reporting: they list and explain briefly what they require as the main characteristics of assessment. These include multiple assessment strategies, criteria, using assessment to inform instruction and guide student learning, student involvement in assessment and effectively communicating assessment information (VDE: 1997, 3). A pattern of similarities is now beginning to emerge between the English and American (Kentucky and Vermont) versions of CASS. This pattern lies especially in the relationship between curriculum, pedagogy and assessment. I investigate this relationship at a conceptual level in Chapter 4 and at the level of implementation in Chapter 6.

According to the VDE, CASS demands a

> a balance and variety of assessment strategies, used to gain information and provide feedback about student learning (e.g., performance assessments, self-assessments, paper-and-pencil tests, checklists, etc.), (3)

The VDE requirement that

> expectations and performance criteria are clear and public (3)

shows that the involvement of all affected parties in learner

assessment is important to the VDE. In addition to this, the VDE emphasis on self-assessment seems to play a more significant role in Vermont than is the case in England and Wales.

An important characteristic of the Vermont approach to assessment is the use of assessment as part of instruction and learning. The idea of learning in assessment, rather than mere end-of-course or end-of-phase assessment of what has been learnt, is paramount in the construction of a programme of CASS, further confirming the existence of a global pattern of similarities. In this regard, educators in Vermont make use of "classroom-based assessments that are embedded into instruction" (3). I investigate the nature of this link between assessment and classroom innovation through the Continuous Assessment in Science Programme (CASP).

The Continuous Assessment in Science Programme: A Vermont Department of Education CASS Initiative

One of the identifying characteristics of the Vermont move to CASS, is the coherent employment of pilot projects, an example of which is CASP. The major goals of CASP (which has now completed its pilot phase) are

> To develop, pilot and evaluate a model of professional development aimed at advancing teachers' skills in conducting everyday assessment of students ...
>
> To develop strategies for conducting everyday assessment of student learning that are integrated and compatible with the

> instructional activities and classroom management …
>
> To build an understanding of continuous assessment: its position in the context of documenting and reporting student growth. (Bless: 1997, 1)

The need for professional development in assessment and for the integration of learning and assessment are emphasised in this case. Nevertheless, without a conceptual grasp of the relationship between curriculum development, teaching and CASS, I believe that its significance is lost. It is with this concern in mind that I offer an interpretation of the conceptual advent of CASS in Chapter 4.

The need for professional development in assessment is a need that I prioritise alongside the need for an understanding of CASS. In Chapter 4, I consider the nature of the professional perspective that is required by educational practitioners if they intend to develop and enact meaningful CASS practice. Only then can the actual goal, the integration of learning and assessment, be meaningfully engaged by educational practitioners.

My analysis of the Vermont example has highlighted two dimensions in the literature on CASS. Firstly, the link between curriculum and assessment, including an approach to knowledge, a perspective on instruction and the implications thereof for learning. Secondly, the importance of professional development. In Chapter 4 I examine these dimensions more explicitly. In the discussion that now follows, I will show that the notion that attempts to capture

these dimensions is authentic assessment. Authentic assessment is the conceptual term that is used by assessment innovators to build a new mode of awareness on the intimate link between curriculum, learning and teaching and assessment. I now turn to examine the conceptual understanding embedded in this notion.

Authentic Assessment

I have presented above short descriptions of CASS in Kentucky and Vermont. In both cases, the notion of performance assessment is strongly mooted. I now focus on a form of performance assessment that has gained considerable sway in contemporary American assessment practice (*e.g.* Darling-Hammond *et al* 1993, 1995; Herman *et al* 1992; Soodak and Martin-Kniep: 1994, 185) *viz.* authentic assessment. Literature on the topic abounds and I illustrate the notion by reference to A Guide to Authentic Instruction and Assessment: Vision, Standards and Scoring (Newmann, Secada and Wehlage: 1995). I have selected this particular text from among the plethora of available works because their conception of authentic academic achievement is an assimilation of the ideas of the most important writers on the topic in the United States, including Newmann and Archbald (1992), Berlak (1992) and Wiggins (1992; 1993).

According to Newmann, Secada and Wehlage (1995), the problem is that schools "seem to promote inauthentic kinds of mastery and achievement" (8). This happens for several reasons, including a

curriculum that encourages the study of a multiplicity of isolated content items and the seclusion or separation of school learning from the types of mastery held by significantly achieving adults in the broader community. What this results in is a belief by learners and adults that the type of mastery achieved in schools is "trivial, contrived, and meaningless" (7). For Newmann *et al* the solution to this problem lies in the introduction of assessment and mastery of outcomes in an authentic way. In this way, schools learning can be made applicable to "issues and problems faced outside school" (7).

They offer a definition of authentic academic achievement that is constructed in terms of three elements *viz.*

> construction of knowledge, disciplined inquiry, and value beyond school. (8)

These three features are important to the analysis of my case study. In Chapter 4 I develop their theoretical background by examining the relationship between the process of production and transmission of school knowledge and assessment practices. The rationale behind the first of these three features - construction of knowledge - is that in the community outside of school, the first task facing successful adults is that of

> constructing or producing, rather than reproducing, meaning or knowledge. (8)

In order for such construction of knowledge to be effected, Newmann *et al* propose that learners should have the opportunity at the site of learning to practise the

> interpretation, evaluation, analysis, synthesis, [and] organization of information that characterizes authentic adult accomplishment. (9)

The notion of construction of knowledge implies that the learner's ability to produce original discourses, things and performances for audiences is enhanced through teaching in a mode of enquiry. According to Newmann *et al*, teaching through a mode of inquiry will provide teachers and learners opportunities to produce knowledge in similar ways to the way it is done by adults in their working environment. The notion of the construction of knowledge leads to a discussion, in Chapter 4, of the professional role of the educator as a researcher or producer of knowledge in terms of the work of Stenhouse (1975) and Cornbleth (1990).

The second constituent feature of authentic assessment is disciplined inquiry. This is in turn formed by an amalgamation of

> 1) use of a prior knowledge base, 2) striving for an in-depth understanding ... and 3) expressing conclusions through elaborated communication. (9)

In authentic assessment, in-depth understanding of a problem is considered more desirable than an acquaintance with discrete pieces of knowledge. Such understanding considers the relationships between pieces of knowledge and affirms the requirement of knowledge construction. The element of elaborated communication is a confirmation at school level of the complex forms of communication that are required in the adult workplace. It is a renunciation of the brief responses required in many

school assessment systems *e.g.* multiple choice and short sentence responses. The notion of disciplined inquiry confirms the value of academic study as integral to a complete education.

Thirdly, Newmann *et al* assert that school achievement ought to have some value beyond school, which would make it a distinctly different form from conventional school achievement (11). It implies that there ought to be a reason for having a certain competence that extends beyond merely being able to demonstrate such a competence. For example, in the adult world of mastery, an author writes and an architect designs buildings not simply to show mastery of a skill but to satisfy a specific purpose or intention. They are of the opinion that "the cry for 'relevant', 'student-centred' curriculum is, in many cases, simply a less precise expression of this desire" (11). For assessment, this means the development of assessment tasks that have some authentic value "beyond being an indicator of success in school" (11).

In conclusion, Newmann *et al* make two observations on why authentic assessment would be a desirable approach in schools. The first reason they offer is that "participation in authentic tasks is more likely to motivate students to sustain the hard work that learning requires" (12). This is likely because the completion of a task that has worth over and above the award of credit for a course, allows the learner to own a greater stake in its successful completion. Secondly, "authentic academic challenges are more likely to cultivate capacities for higher order thinking

and problem solving" (13) because of the transferability of mastery between authentic tasks at school and real life tasks.

I now turn to the work of Linda Darling-Hammond *et al* (1995) who has documented the experiences of developing authentic assessment in five American schools. In this investigation she examines how the work of authentic assessment has interacted with and influenced the teaching and learning experiences of students (xi). It is indicated in the foreword that

> the issue of assessment comes first, but we see in [the case studies] how it becomes powerfully enveloped in the processes of learning and teaching, of informing students, teachers, parents and others of "how their children are doing". (ix)

Authentic assessment is shown in these case studies to play a role in supporting changes towards learner-centred education as well as to focus the efforts of the school community on "deep learning demonstrated through applications and performances" (xi). I illustrate the enactment of these changes in a discussion of one of her case studies which follows below.

The schools that she reviews share a vision of

> developing ways to focus students' energies on challenging, performance-oriented tasks that require analysis, integration of knowledge, and invention - as well as highly developed written and oral expression - rather than focusing merely on recall and recognition of facts. (2)

Assessment occurs in the process of performance of these tasks and

in some cases the freedom from contrived assessment practices are so successful that "they are practically indistinguishable from instruction" (3). An example of such a success is the portfolio assessment system in place at Central Park East Secondary School (CPESS), located in the East Harlem neighbourhood of New York City.

CPESS draws on a portfolio system to the extent that the portfolio constitutes each learner's graduating performance. Darling-Hammond *et al* observe that this graduating portfolio

> establishes high standards without standardization, and it creates a dynamic vehicle for ongoing curriculum development, professional discourse, and meaningful dialogue … The assessment system … succeeds at motivating and deepening student learning. (22)

The portfolio (typically 50 - 100 typed pages) is made up of specific tasks in fourteen categories and is assessed by a graduation committee consisting of teachers and a peer. Seven of the fourteen categories are presented orally, four from the core subjects of Science and Technology, Mathematics, Literature and History and the rest from a broad range of areas from Ethics to Physical Challenge. The learner also submits a more extensive assignment in an area of special interest in addition to the fourteen categories. The categories are scored on a range from "needs more work … [to] … exceeds our standards" (37). The same assessment system is in place in the junior secondary levels of

the school *i.e.* the graduation portfolio is not "an add-on to the school curriculum, or a trendy, unconnected top layer" (49).

Darling-Hammond *et al* examines some of the issues that stand out in the way that CPESS has gone about authentic assessment so as to be part of "an organic process of goal-setting, communication, collaboration, and learning" (60). These include the "balancing of objectivity and subjectivity" (65) and the "balancing of democracy and efficiency" (67). The objectivity-subjectivity balance is achieved by "recognizing context while maintaining commonalities" (66) *i.e.* the context of the learner as individual is balanced by the recognition of common standards and the requirements of the portfolio. The committee structure that evaluates portfolios also plays an important role in guarding against bias and subjectivity by "ensuring multiple lenses, or perspectives, on the work and the student" (66). The democracy-efficiency controversy focuses on those who should be involved in the assessment process. CPESS has opted for a democratic route, involving several teachers, parents, students and outsiders in the assessment process (68). The efficient route, for CPESS, "undermines the possibilities for school, teacher, and community learning, ownership, and improvement" (68) and as a result they rejected it.

Two further issues of note and of particular relevance for this report are "achieving standards without standar 64) and "balancing a developmental view and an evaluat .66). I separate these issues in the case study because th ighlight the

fundamental difference between the notion of authentic assessment and conventional, summative assessment. These notions reject the loyalty to the standardised testing of summative assessment and confirm the notion of integration of learning and assessment.

Although the CPESS portfolio system has a common framework and criteria, it renounces standardisation of tasks into a set of stock responses. This is effected by not streaming the learners into homogeneous groups as well as a focus on holistic assessment strategies. Although the portfolio system at CPESS makes room for the separation of the graduation portfolio into subsections that provide benchmarks and indicators for assessment,

> the overall judgement that a standard has been met is ultimately more important (and more likely to be reliable and valid) than is adherence to more discrete, standardized criteria. (65)

Thus, the final assessment of the portfolio is integrated and holistic but with due consideration of the parts that make up the whole. The observation that such an integrated, holistic assessment is "more likely to be reliable and valid" (65), is in keeping with Bernstein's argument (1975) that integration is likely to lead to a common system of assessment. I investigate Bernstein's argument on integration in Chapter 4.

The second notion, that of a developmental-evaluative balance, deals with the integration of learning and assessment. For CPESS, the balance

> concerns a developmental frame for evaluation, and an evaluative frame for development. (67)

Here the emphasis is on continuous growth and development of the learner. Learners have a number of options open to them as to how long they take to complete the senior phase. They can choose to take from one to three years and may even complete their portfolios after having taken up employment or post-secondary coursework. Standards are represented by criteria rather than norms and rankings. This means that the learner that has not yet satisfied all the criteria is not considered to be lagging behind a peer group or a level that should already have been attained. This is seen by learners at CPESS as a motivating rather than a discouraging factor.

The experience of portfolio assessment at CPESS is an outstanding example of what is potentially achievable. Despite considerable resistance from the bureaucracy, CPESS insisted on bringing their project to fruition and today have what I see as a fully fledged and credible system of graduation by portfolio in place.

The case of the United States is rich and diverse and I have of course been selective in this review. What I have offered is some impression of the scope of essentially successful encounters with assessment reform. They do not necessarily capture the full scope of the American experience. Rather, they provide the practical foreground for the conceptual analysis in later chapters of this report.

The drive for performance based, authentic continuous assessment in the United States is situated within a simultaneous transformation at the levels of American educational theory, state policy and school-based curriculum initiatives. It is thus a concern that has bearing on a multiplicity of levels of social interaction. Assessment innovation thus takes place concurrently with and in terms of socio-political change. This makes South African assessment initiatives even more demanding than those in the United States. I show how CASS goals can be achieved by the development of a particular conceptual way of seeing curriculum practice (and therefore assessment practice) in Chapter 4. I then show how this conceptual mode has been applied in Chapter 6.

Case 3: South Africa

In the light of my analysis of official texts on CASS in Chapter 2, these documents are not discussed further here. Instead, I focus on one of the first non-official attempts to describe CASS in South Africa *viz.* Penny Mackrory's series of three essays in A.P.T. Comment. Seen as a unit, Mackrory's trio of articles serves two primary functions. Firstly, it offers a level of insight into the practical implementation of CASS in South Africa that was hitherto not available. Secondly, it implicitly affirms the similarity of the South African rendering of CASS to the global context of alternative assessment methods.

In the first article, she notes that continuous assessment (a term that she uses interchangeably with continuous evaluation)

> allows teachers to use any planned learning experience to assess each learner's achievements and progress. (1996a, 17)

As her starting point she thus confirms the notion of integration of learning and assessment as a fundamental element of CASS, thereby locating South African CASS within the realm of an international CASS tradition at a basic level (*cf.* Hoste and Bloomfield: 1975, 19; KDE: 1997e, 3; Darling-Hammond *et al*: 1993, 67). She points out that CASS is unlike summative examinations in that it

> gives direction to the teacher,
> sets achievement targets for the child,
> allows parents to have realistic expectations,
> allows assessment to take place over a long period of time,
> reflects the "normal" work of the pupil,
> allows flexible approaches to assessment to be used,
> ensures a greater part of the syllabus is addressed,
> allows skills and concepts that are difficult to test in an examination to be assessed,
> allows coursework and class tests to be adjusted to the particular needs of the learner,
> motivates learners to work consistently through the year, and
> has the advantage that the final evaluation of the learner does not depend on what he/she can remember and do in one test or examination. (17)

These points of distinction of CASS demonstrate similarity with

the observations of Darling-Hammond *et al* (1995) in their analysis of the CPESS approach, especially the idea of the final evaluation being a more holistic assessment, drawing on more than just the final examination (Darling-Hammond: 1995, 65). There is also a likeness between the KDE approach and the qualities that Mackrory identifies above, for example the idea that CASS is an important source of information for the teacher and the parent (KDE: 1997d, 1). I can thus conclude that there is room for the testing of the South African version of CASS against the international experience, given the similitude of their basic building blocks.

Two additional observations that are important for Mackrory include transparency and cumulation of marks. In this regard, she notes that CASS "should be a transparent process" (17), meaning that all parties are aware of the nature of the assessment and its criteria. This is especially pertinent to feedback and record-keeping practices and can be related to the notion of balance between democracy and efficiency advocated by CPESS (Darling-Hammond *et al*: 1995, 68). She adds that "CASS should not be confused with cumulative assessment" (19). Valid CASS practice is thus more than a tally of a series of summative assessments, a view also held in the Kentucky version of CASS (KDE: 1997e, 1).

In the second of her articles, Mackrory focuses on CASS in practical work, reiterating her view that CASS should be "integrated into the learning programme" (1996b, 17). Her view of practical work is

> performance skills or tasks usually associated with, but not confined to physical education, science, mathematics, and technical subjects. They require the learner to demonstrate knowledge, understanding, ideas, concepts, skills and the manipulation of objects. Learners have to physically do something e.g. observe, measure, speak, listen, construct and manipulate materials or instruments. (17)

Her introduction of the notion of performance tasks in the South African context is of critical importance. In this regard, the experience of CASS in the United States has shown that performance assessment is a tool of considerable consequence in the development of effective assessment tools (*e.g.* Wiggins: 1992).

Mackrory offers two possible methods of going about the assessment of practical skills, including what she refers to as the analytical and the global approach respectively. These are antithetic approaches in that the first involves breaking the task down into its constituent parts so that assessment can take place. Juxtaposed with the analytical approach is the global approach, which suggests that

> the process should not be analysed into fine details … instead, teachers should award marks for the observed overall performance. (18)

This can be compared with the approach at CPESS (Darling-Hammond: 1995, 65) in which although the graduation portfolio is made up of a wide range of specific areas or skills, the whole portfolio is considered to be more than merely the sum of its parts.

In her third article in the series, she focuses on CASS in research assignments. She makes the observation that

> projects can be valuable learning experiences if there are definite skills based objectives and there are *limits* [my emphasis] to what is asked. Ideally assessment should be formative, diagnostic and continuous and should indicate what further information skills should be included in the work programme. (1997, 17)

She thus entrenches the conceptualisation of CASS that she introduces in her first two articles *i.e.* that assessment is part of the learning process and that it is an on-going, formative activity. The notion of limits can be read almost as a prelude to that of criteria, as they are referred to in Curriculum 2005. I will show later that the idea of limits is also relevant to the setting of boundaries in making an open-ended assessment system meaningful. This is one of the most important contributions that this research report makes, and the idea is developed in Chapter 4, with an analysis of an exemplar of enactment in Chapter 6.

Mackrory develops her argument on limits by noting that the research assignment "must have definite goals; the learner must know the goals and how the goals will be assessed" (17). She also purports that "research assignments should be done in class under the supervision of the teacher" (18), to instil an understanding of and help thwart problems such as plagiarism and transcription. This supervisory role is characterised by a learner-teacher

alliance, rather than a traditional, top-down instructional mode. She annotates this view with the affirmation that "whenever possible, both teacher and learners should be involved in the assessment" (19). I examine this issue through the notion of framing or the regulatory role of the educator, in Chapters 4 and 6.

From the Outside Looking In

I now turn to a view on the South African CASS scenario by an American educator. Katherine Cress, through her research experience in CASS, sheds light on CASS in South Africa in her article "Reassessing assessment" (1996). She refers to CASS as "a new buzzword" (9) in South African education.

For Cress, CASS

> holds the promise of transforming the way teachers think about the nature and quality of students' work. In the growing move away from talk and chalk, it provides alternative ways of setting, marking and valuing assignments. (1996, 9)

Seen from the educator's position, CASS is thus about moving beyond traditional summative assessment methods such as examinations. Looking at the learner's point of view, she is of the opinion that a skilfully conducted pilot programme can

> offer students the chance to translate knowledge into meaningful action by giving them diverse opportunities to show what they know - and what they can do. (9)

In terms of the views above, the fundamental implication of CASS for both learner and educator is thus an openness towards a multiplicity of means of assessing and being assessed.

She notes that CASS, through various methods - including assignments, projects, homework, reports and tests - has long been the practice in the United States but adds that recent developments such as portfolios and performance tasks have taken off (*cf.* Newmann and Archbald: 1992; Darling-Hammond: 1993, 1995). Project and group work is being used to place learners in authentic situations in which they apply a wide range of exacting competencies by which they are assessed. This helps develop students beyond simple rote-learning to creative and co-operative problem-solving, which are, for Cress, essential life skills. She asserts that "these are the skills fundamental to successful adult life" (9).

Cress considers two exemplars of CASS that have been enacted in the United States and how these can inform the South African implementation of CASS *viz.* Vermont and Kentucky. She observes that the system in Vermont has worked well, whilst that of Kentucky is problematic. A distinction that she draws between these two cases is that Vermont teachers used pilot projects for implementation whilst in Kentucky, changes "came too quickly" (10) and there was no pilot and no teacher training. There is, however, commonality between the two in that criteria have been identified. Cress sees these as these are "the backbone of assessment" (10).

For Cress the implications of the Vermont and Kentucky experiences for the implementation of CASS in South Africa are clear:

> Involve teachers at the piloting stage, who can develop the tasks as well as pilot them and collect samples of student work. Then, use pilot teachers as the wise advisers they are, and act on their advice. (10)

This advice is repudiated by the view of the NDE that

> we cannot ask large sections of learners in this country to use the old system for a few more years whilst a new one is perfected. (NDE: 1996b, 40)

Cress reiterates, however, that there be adequate time for training and adds that one "[should] not assume that an innovative policy means that teachers can, without significant support, change the way they work" (10).

She extends the notion of inclusion and participation of stakeholders in the implementation process beyond the level of teachers-based pilots alone. Whilst teacher involvement is what led to Vermont's success and the lack thereof caused problems in Kentucky, Cress observes that parents too must be drawn into the process of change in assessment. The relevance of parental involvement is confirmed by the CPESS experience (Darling-Hammond *et al*: 1995) and also by Mackrory (1996a: 17).

Thus, by way of summary of the essays by Cress and Mackrory, the facets that lie at the forefront of CASS issues in South Africa

are transparency of the process and flexibility of assessment approach coupled with the integration of learning and assessment into a formative process as well as the introduction of authentic performance assessments. There is a marked consonance between these facets and the principles of educational renewal in South Africa that I accentuate in Chapter 2.

Declaration of a Heretic

CASS seems to enjoy widespread international acceptance, if one considers the level of support for it encountered in assessment literature from around the globe. However, its recognition is not universal. The dissenting voice of a writer who expresses vociferous opposition to CASS, can be heard in the work of Gavin Putland of the University of Queensland in Australia. In his article entitled "Declaration of a heretic" (1991), he declares that "the standard method of assessment … should be a 100% final exam" (1).

In Putland's opinion,

> the system known as 'continuous harassment', in which the final exam carries 85% of the assessment while fortnightly assignments take 85% of the time, should be scrapped. (1)

He believes that a number of benefits is likely to flow from his proposal. Before I consider these benefits, I point out that some of these same arguments have been used *in favour of* an assessment system based on CASS.

The first benefit that he identifies is the acquisition of theoretical knowledge. Putland asserts that the time spent on projects and assignments is used to the detriment of theoretical understanding. This happens to the extent that students complete assignments before they fully comprehend the theory that underpins them. He adds to this the view that most of the misunderstandings in assignments, which teachers are expected to correct, appear because the assignments were started too early (3). Assignments also take longer than they ought to for this reason. As a result, they do nothing to reinforce or enhance theoretical understanding (2). A fully examination-based assessment negates this problem, in Putland's view, thereby allowing the student the time to adequately prepare for the examination that makes up the major portion of the final grade. On the basis of his rejection of the notion that assignments develop understanding, Putland implicitly rejects the notion of learning in assessment that is central to the CASS argument. His argument is not directed at those practical courses that are 100% CASS. These, Putland believes, should remain continuously assessed.

The second benefit of reducing CASS, according to Putland, is that it will allow student learning to be "more like professional learning" (2), with the result that examination-based assessment will be "a better predictor of professional performance" (2). This is an interesting claim in the light of CASS strategies to place learners in authentic learning situations, the very aim of which

is to emulate the intellectual demands of the professional environment of the adult workplace and so to prepare the learner for successfully negotiating them. Proponents of CASS have recommended this strategy because they see examinations as failing to prepare the learner for the type of situation he is likely to encounter in the professional surroundings associated with the social reality of adulthood.

The third reason, observes Putland, why it may be beneficial to the learner to reduce CASS, is that there are situations in which CASS can "penalize diligence" (3). There are conscientious students who fall into the trap of spending too much time submitting good work - as a consequence they have too little time to prepare adequately for the examinations. Less diligent students submit weak assignments and do little study for examinations, barely achieving a pass. This tends to "level downwards rather than upwards" (3), which is to say it results in a lowering of standards. If we do away with CASS assignments, he says, "conscientious students will have less rope to hang themselves with" (3). Putland concludes his paper with the claim that

> Partial continuous assessment, among its other faults, expends considerable resources in helping the least deserving students at the expense of the most deserving ones. (4)

He finds such a situation unacceptable and as a result he rejects the notion of CASS in its entirety, in favour of a system based exclusively on examinations.

Conclusion

In this chapter two main points stand out. Firstly, there are significant similarities in the way CASS is understood across a variety of contexts. Terms such as cumulation of marks, ongoing assessment, learning experience assessment, performance assessment, portfolios *etc.* are encountered repeatedly in texts from across the international spectrum. In my opinion, these similarities constitute a vehicle that can allow for the negotiation and interpretation that is a prerequisite to the meaningful enactment of CASS in South Africa. A pilot project could be informed by due consideration of the points of congruence between the multiplicity of international contexts, thereby enabling a selection of elements appropriate to the South African context. From this position, I see uniquely South African items being developed to cater for the special needs peculiar to the local context. Secondly, despite the apparent hegemony of CASS, not all responses to it are of a positive nature, as evidenced by the reaction of Putland. None the less, it is clear from the literature that CASS has gained momentum on the international education circuit and the degree of effort and expense that has been invested in its implementation seems to indicate that it will remain current for some time.

I have left unexplored a central question that I take up in Chapter 4. This is the question of whether a constructivist approach to school knowledge (advocated by proponents of CASS)

means that the context and process of teaching are deregulated. This question also demands a response to the question of how the educator constructs a learning context in which two very different emphases - freedom and creativity in the social construction of knowledge, and disciplined enquiry - co-exist. CASS is based on the assumption that the old learning environment was over-regulated. In the next chapter, I investigate the nature of regulation in the learning environment implicit in the set of principles (legitimacy, integration and flexibility) that underpin CASS.

In the literature reviewed in this chapter, I have tacitly drawn the reader's attention to what is missing in the current literature on assessment: what is missing is a debate on the way different approaches to the question of the social construction of knowledge shape the approach one takes towards some of the demands made by CASS. The dominant trend in current writing on assessment is to describe activities and alternative types of assessment. Many writers state a principled conviction in favour of the idea of integration between learning and assessment but there is no sufficient undertaking to examine this relation from the point of view of current debates on curriculum and pedagogy. In Chapter 4, I examine the process of production and transmission of knowledge and its regulative consequences for assessment, to address these issues.

Chapter 4

Literature Review Part 2

Conceptual Framework

Introduction

As proposed in Chapter 2, the introduction of CASS demands a radical reconstruction of one's understanding of the relationship between learning and assessment. In this chapter I argue that this reconstruction requires seeing learning and assessment as an integrated practice and I situate this understanding of assessment within a curriculum paradigm.

I rgue that this change presupposes a different conception of the relationship between theory and practice. This view forms the philosophical foundation upon which I have constructed a notion of the nature of CASS in this research. A linear view (Fay: 1975, 32) of the relationship between theory and practice is compatible with the view that assessment takes place after learning in order to assess the extent of learning. A critical view (Fay: 1975, 92) on the other hand, leads to an understanding of assessment as contributing to the learning process while it is taking place (*i.e.* learning in assessment). I maintain that one's understanding of the relationship between theory and practice impacts on one's understanding of curriculum and assessment.

A linear view implies a technocratic view of curriculum, as a documentary checklist for action in the classroom. A critical view holds that there is an ebb and flow between curriculum as document and curriculum as lived practice (Cornbleth: 1990, 24). The development of a critical conception of curriculum provides a set of paradigmatic tools with which to understand and analyse CASS. The congruence between a critical view of theory and practice, and CASS lies in the non-linear view of the relationship between theory and practice. This emphasises the interactive nature of curriculum practice, which implies a reciprocal relationship between learning and assessment, a quintessential element of CASS.

The work of Bernstein (1975; 1990) is important to the development of this argument as it elucidates conceptually how the exemplar in Chapter 6 works. An explicit theoretical perspective is critical to understanding, hence my emphasis on it in this chapter. In this chapter I develop the notions of legitimacy, integration and flexibility in terms of an additional set of ideas, that I borrow from the work of Bernstein. These are notions that describe the social process involved in constructing knowledge in a CASS environment. I use the notion of classification to explain the nature of integration of school knowledge. I use frame to explain the nature of flexibility in classroom interaction with school knowledge. In this way classification and frame help me to explain what is at stake in legitimacy, particularly with regard to social interaction between the learner and the educator.

The First Layer: A View of Theory and Practice

Current research in curriculum theory indicates that it is important to consider the nature of the relationship between theory and practice (Aronowitz and Giroux: 1986; Cornbleth: 1990; Meighan: 1986). Because our understanding of this relationship informs the way in which we see ideas as translatable into contextualised action *i.e.* lived experience, it is important that change in curriculum theory is accompanied by a change in the way we take cognition of this lived experience. Fay's Social Theory and Political Practice (1975) develops this understanding.

In leading up to his view, Fay describes and critiques the positivist view of the relationship between theory and practice. In a description of the positivist mode of social analysis, he argues against the claim that "knowledge gained from social science will enable men [*sic*] to control their environment" (19). According to Fay, this claim means that positivists assume that the relationship between theory and practice is such that theoretical knowledge enables us to control, shape and direct our environment. For the positivist, knowledge of the natural sciences gives the person power over the natural environment. In positivist thinking, this notion is extrapolated and made applicable to social knowledge and the social environment. Control of the environment in this sense implies social control and power over people in the name of more efficient social practice.

Expanding on this, Fay points out that for the positivist social scientist there is "a connection between a positivist theory of social knowledge and a social engineering conception of political practice" (30). For Fay this means that the nature of the positivist link between theory and practice lies in the notion of what he calls "technical control" (79) of the environment. The implication, from within a positivist perspective, is that increased theoretical efficiency leads to increased technical efficiency. Simply put, the positivist belief is that increased or improved social scientific knowledge (improved theory) makes room for a greater potential for social control (improved practice).

Fay does not accept this view as a valid rendering of lived experience nor of the influence of such lived experience on the construction of our collective and individual consciousnesses. He argues that interpretation of meaning occurs within a multiplicity of contexts (71). This implies, for Fay, that practice is subject to social power relations, differing interests and social interpretation. The equation that better theory equals better practice is thus fallacious for Fay.

In the light of this account, he offers an alternative, which he calls the critical model of theory and practice. He observes that from within the critical perspective "social theory is interconnected with social practice" (94). Its main feature is that practice is not seen as resulting from social theory because

people perform many actions that are not the result of conscious decisions or knowledge. He argues that his alternative is a critical model in that its method of testing the truth of theory lies in "ascertaining the theory's practical relevance" (92). He elaborates with the claim that the validity of theory rests partially on the extent to which it is effectively translatable into practice. This constitutes a turn away from the opposing positivist view that practice is imperfect when it does not accord with theory. The implication is a shift from a view of theory determining the nature of practice to one of theory and practice mutually determining one another.

This shift from a causal or linear model to an interactive model implies a shift in how curriculum is perceived *viz.* curriculum as practice. Most importantly for this work, it implies a shift in how the relationship between learning and assessment is perceived. This shift is from a linear notion of assessment as summative, paper-and-pencil tests to a critical notion of assessment as including multiple creative and formative alternatives that constitute an integral part of the process of learning. In the sections that follow, I trace the theoretical route that needs to be traversed by the reader in order fully to comprehend the magnitude of the conceptual frontiers that have been transcended by the educational practitioners in the exemplar that I describe in Chapter 6, such that they are empowered to enact their version of CASS.

The Second Layer: A View of Curriculum Underlying CASS

The above interpretation of the interconnectivity of theory and practice forms a platform from which to view critical curriculum and alternative assessment practice. In this section, I consider the views of Lawrence Stenhouse (1975) and Catherine Cornbleth (1990) as proponents of critical models of curriculum. Their models are important for this work because they capture what I see as essential characteristics of alternative assessment, including CASS.

Critical Curriculum: Stenhouse and the Educator as Researcher

The picture offered by Stenhouse in An Introduction to Curriculum Research and Development (1975) highlights the way in which this view can be applied in curriculum terms. Stenhouse, like Fay, offers a model that he rejects and he proposes an alternative view that he favours. Before considering these models, attention should be focused on his working definition of curriculum as

> an attempt to communicate the essential principles and features of an educational proposal in such a form that it is open to critical scrutiny and capable of effective translation into practice. (4)

The key phrases in this definition are "critical scrutiny" and "translation into practice", whereby curriculum principles are negotiated in terms of the context, into activities that occur at the site of learning. Stenhouse expands on his point with the

assertion that "A curriculum … takes account of the problem of implementation in the institutions of the educational system" (5). The "problem of implementation" (5) as I see it is in part the reality that translation of theory into practice, even when this translation is of a reciprocal or interactive nature, occurs within a context of principles or parameters. I discuss these parameters in the next section of this chapter (the third layer of the exemplar) in terms of Bernstein's notions of classification and frame.

Thus, whilst the context of learning is one of particular preferences, these preferences are framed by an ostensibly legitimate superstructure or bureaucracy. Such legitimacy is earned through the process of subjugation to critical scrutiny by a wider community that includes educational practitioners. The link between curriculum theory (policy) and curriculum practice (pedagogy) is thus made explicit: practice has a role to play in the validation of policy with the stated proviso of broad guiding principles that underlie practice. This is supported by Fay's account of a critical relationship between theory and practice. What this means for this report, is that CASS practice has a role to play in validating CASS policy and *vice versa* - a novel extension of the one-sided, linear view. I now turn to an analysis of two opposing models of suggested by the positivist and critical views of theory and practice respectively. The positivist view is compatible with an objectives model of curriculum, and the critical view with a process model.

Stenhouse (1975) considers the work of a range of proponents of the objectives model. Tyler's classic definition of behavioural objectives, as quoted by Stenhouse, forms the basis of this model:

> One can define an objective with sufficient clarity if he can describe or illustrate the kind of behaviour the student is expected to acquire so that one could recognize such behaviour if he saw it. (54)

Such a definition allows the objectives model to be placed within the realm of positivism where the theory-practice relationship is linear in nature. He also points out that an objectives model in its pure form simply tests curriculum as a product against a pre-determined specification (123).

Stenhouse observes that "skills are probably susceptible to treatment through the objectives model, which encounters its greatest problems in areas of knowledge" (85). In these terms an objectives model might lend itself favourably to subject disciplines such as woodwork and technical drawing, with their predominantly skills-based content but probably not to one such as history, that is predominantly knowledge-based. He argues that

> knowledge is primarily concerned with synthesis. The analytic approach implied in the objectives model readily trivializes it ... the objectives approach is an attempt to improve practice by increasing clarity about ends ... But ... the best means of development is not by clarifying ends but by criticizing practice. (83)

There are two important issues at stake in this section of Stenhouse's argument. Firstly, since knowledge is a contested terrain it cannot be reduced to a set of mere behavioural objectives. Hence his argument that it is concerned with synthesis, a mode of practice that denies the logic of a means-end model. Synthesis in this case involves the integration of educational outcomes with the process of learning that is the foundation of these outcomes. For CASS this implies synthesis, or integration of learning and assessment. Following from this is the second implication: that an objectives model does not embrace a satisfactory notion of practice because it does not submit itself to a tradition of interpretation of practice. This idea of criticising practice or "critical scrutiny" (4) of practice leads to a different conception of the role of the educator *i.e.* towards that of a reflective practitioner. This notion is of crucial relevance to the exemplar that I analyse in Chapter 6, and I devote considerable attention to it in this part of the report.

In his analysis of the process model, Stenhouse identifies the issue at the centre of the matter:

> can curriculum and pedagogy be organized satisfactorily by a logic other than a means-end model … without using the concepts of objectives? (84)

He has no doubt that this can be the case. As an alternative, he offers a process model of curriculum that is not based on objectives and in which the teacher "casts himself in the role of learner" (91).

The route towards this logic involves process-type teaching and process-type content. He argues that there are contents that are worthwhile in their own terms that can be intrinsically justified as part of curriculum and pedagogy. By way of a process model he then offers an answer to the question "how [*i.e.* practice] is the teacher to handle what [*i.e.* theory]?" (90). In other words he considers which type of teacher actions are most appropriate for handling the most appropriate types of content so as to facilitate the realisation of a process conception of educational practice, or more specifically for CASS, a process conception of assessment practice.

His analysis of how the process model actually works is developed in terms of these two last-mentioned elements *viz.* the teacher's actions and curriculum content. In this regard a process model allows for a wider variety of options for teachers in terms of the way they teach and what they teach. In fact, the options become almost unlimited, since the extent of the variety is constrained only by the teacher's ability to generate appropriate sets of classroom activities in response to situational demands. The notion of flexibility (*cf.* Chapter 2 of this report) is a term that has gained ascendance recently and is useful in describing the implicit link that enables content and teacher actions to be more process oriented. It is the principle of flexibility that enables curriculum change to make room for the accommodation of a multiplicity of contents and pedagogies within a coherent system.

A process model implies a high degree of flexibility for teacher and pupil, albeit within a broad set of parameters (*cf.* The Third Layer, in this chapter). This flexibility itself takes on a range of meanings depending on the specific circumstances but it can include the nature of assessment and even the physical arrangement of the classroom and so on.

The idea of a process model of teaching implies educator competence. Educators are expected to show commitment, to be open to criticism and dialogue and to demonstrate collaborative skills. However, there is one notion that encapsulates these skills and qualities *viz.* "research-based professionalism" (141). This notion refers to the idea of the educator as a reflective practitioner, which I examine in detail herein after.

In a process-type curriculum the teacher is expected to be

> a speculative behavioural and social scientist (91)

or, a reflective practitioner. It is this notion that forms the springboard from which the research perspective of the process model is launched. Stenhouse's particular contribution is to foreground the conditions for reflective practice through a process conception of curriculum. It involves a break with the prescriptive objectives model and is an advancement on the offerings of flexibility in the process model. For the research model, curriculum development occurs at the level of individual schools and enables a process of "continuous organic development" (123) to take place. It implies a research-based pedagogy (141)

that is the object of on-going probing and exploration of ways in which to improve. This is the model that I see as prerequisite to an effective implementation of CASS. In Chapter 6 I show how educational practitioners are deploying such a model in a secondary school.

The research perspective is an experimental and developmental mode of curriculum that

> points towards a tradition of curriculum research which focuses on the study of problems and responses to them rather than the invention of ambitious solutions before the problems have been properly studied. (125)

In other words, the locus shifts from answers *per se* to the process upon which the learner's route to an answer is founded. The culture in which this shift occurs is the shift from positivism to a critical view of social science in which it is suggested that there is a multiplicity of routes towards the solution to a problem. This insinuates that more time and effort should be employed in the discovery and contemplation of these multifarious paths than upon the mere provision of clichéd responses to dispute or controversy that is offered for study at the site of learning. So the route towards a solution is regarded as more educationally significant than the solution itself.

By way of illustration, Stenhouse draws on an example of a curriculum project that focuses on the issues involved in approaching race relations. The project has two premises:

1. that nobody knows how to teach race relations;
2. that it is unlikely that there is *one* way of teaching about race relations which can be recommended. (126)

What this means is that the teacher as researcher develops curriculum as part of practice and a component of the research undertaken by the teacher will be to justify on educational grounds the form that curriculum takes *i.e.* to justify the route taken to arrive at a solution.

A research perspective of curriculum denies the view that educational policy alone gives meaning and authority to practise. The burden of legitimation and justification of good practice placed on the educator as researcher. This has implications for the character and vision of the educator since such justification would not be legitimate on mere pragmatic grounds. There would have to be some foundational notion that allows for the development of the required type of educator in an interactive pedagogical environment. In this regard Stenhouse observes that "a particular kind of professionalism is implied: research-based teaching" (141). He describes his conception of such professionalism as

> The commitment to a systematic questioning of one's own teaching as a basis for development;
>
> The commitment and the skills to study one's own teaching;
>
> The concern *to question and to test theory in practice* [my emphasis] by the use of those skills. (144)

I maintain that the theory that is tested is not pedagogical

theory alone but also education policy. I would also argue that such testing of theory in practice can and ought to lead to the revision of theory and policy such that they become more accurate in both their vision for and their rendering of lived experience.

Stenhouse summarises his point of view on research-based extended professionalism as

> a capacity for autonomous professional self-development through systematic self-study, through the study of the work of other teachers and through the testing of ideas by classroom research procedures. (144)

The reciprocal and interactive nature of the relationship between practical work and ideas is stressed in this assertion. As such it corroborates my view on the nature of curriculum (including assessment practices) as a practice that develops in a context that allows for and enables professional reflection.

Critical Curriculum: Cornbleth's Notion of Curriculum as Practice

With its emphasis on practice, Cornbleth's Curriculum in Context (1990) proposes and develops an argument around the importance of the context in which such practice takes place. Although Cornbleth too offers an argument for the due consideration of practice in issues of curriculum, her central addition to the study of curriculum lies in the emphasis she places on contextual influence.

The essence of Cornbleth's work lies in her distinction between two opposing conceptions of curriculum *viz.* technocratic and critical curriculum:

> If … we conceive of curriculum as a document … curriculum change efforts are likely to focus on document revision and perhaps teacher 'training'. If … we conceive of curriculum as contextualized social process, curriculum studies are likely to be practice oriented and curriculum change efforts are likely to focus on contextual change. (12)

Thus, for Cornbleth, curriculum is not merely a document but actions that take place within a specific and malleable context. The emphasis thus falls on the way that the curriculum as document is applied across a multiplicity of contexts within the school, not on the value of the raw document as such. Differing contexts imply differing ways of enacting the official policy that is contained in the curriculum document, hence the importance attributed to contextual influence upon the official policy. Thus: a change to a system of CASS implies a change in the way we conceive assessment practice, not simply assessment policy, since policy cannot capture the nuances of specific assessment contexts that can feasibly be unfamiliar to the architects of policy documents.

Cornbleth's critique of technocratic curriculum forms the basis of her portrayal of her critical conception. The most important of these characteristics is that technocratic curriculum is conceptually decontextualised as

> curriculum and its construction are seen as apolitical or neutral, apart from or above competing social values and interests. (17)

This is largely the result of the non school-based, outside specialist curriculum development typical of the top-down technocratic model (14). The working context in which curriculum practice takes place is thus ignored as a result of the conceptual distance between the so-called objective curriculum theorist and the teacher that is seen by the bureaucrats as embedded in the subjectivity of curriculum practice - a negative trait for the bureaucrat.

A related element of this characteristic that Cornbleth identifies is the "structural and sociocultural isolation" (17) of curriculum and curriculum construction processes. Together, these levels of isolation constitute what I call an operational decontextualisation. The decontextualisation of curriculum is thus experienced for Cornbleth both at the level of bureaucracy and at the level of implementation or enactment.

The result, maintains Cornbleth, is a limited sensitivity and responsiveness to the contexts in which the curriculum is to be used. She suggests that the alternative to this conceptual and operational decontextualisation lies in a view that "would treat curriculum critically rather than technically, as a contextualized social process" (18) *i.e.* curriculum is seen as the things that actors within the curriculum process do in a self-reflective

fashion and in which the importance of the site of learning as a contested context is emphasised. She rejects the technocratic view of curriculum with its implementation of a preformulated taxonomy of objectives. Similarly, a technocratic view would be incompatible with a CASS approach.

Cornbleth is adamant that despite the persistence of a general predisposition towards a technocratic mindset among educational bureaucrats, this

> should not be taken as evidence for technocratic inevitability ... What has been socially constructed can be reconstructed. (27)

The key to such social reconstruction lies, for Cornbleth, in reconstruction of the context. She notes that this in turn implies that "curriculum change necessarily entails contextual change" (9). This claim is at the heart of the critical nature of curriculum as contextualised social practice. This process affords educators acting as research professionals the opportunity to develop relevant CASS schemes in terms of their specific milieus - an application of the reciprocal relationship between curriculum and context.

Cornbleth extends her notion of critical curriculum by introducing and developing what she refers to as

> a critical conception of curriculum that emphasizes the continuing construction and reconstruction of curriculum in classroom practice. (13)

It is a critical approach in that it constitutes curriculum as a site of struggle. She argues that this process allows for the integration of context, knowledge and pedagogy. Where technocratic curriculum involves conceptual separation, critical curriculum involves "conceptual integration" (24). This notion relates to many areas of education but Cornbleth pays particular attention to its implications for context, knowledge and pedagogy. Context is the most important of these for Cornbleth and she directs the largest measure of her attention towards it. Context implies "the actual, day-to-day interactions of students, teachers, knowledge and milieu" (24). Hence, curriculum is not merely practice but *situated* practice (Lave, 1991). She uses the idea of knowledge to demonstrate a shift away from the tradition of linear transfer of knowledge from the teacher to the taught. Rather, she argues, curriculum knowledge is contested and constitutes "opportunities [for learners] to construct, reconstruct or critique knowledge" (26). The idea of pedagogy implies a shift in the way educators think about how their educational practice has its origins. It is a shift from the notion of a sequential style of reasoning about pedagogy in which curriculum practice is no more than the transferral of the syllabus in a prescribed way from teacher to pupil. Instead of this passive and linear mode of information transplant, conceptual integration implies "dynamic interaction among policy, planning, enactment and structural and sociocultural context" (26). Curriculum policy and planning thus exist in a reciprocal relationship with pedagogical practice and the context in which its enactment takes place.

I have shown above that an intimate relationship exists between a group of three fundamentally linked conceptions *viz.* 1.) a critical view of theory and practice 2.) a research conception of teaching practice 3.) a view of curriculum as contextualised social process. The problem as I see it is that although the literature on CASS calls for a principled integration between learning and assessment and for the reprofessionalisation of teachers' work, there has been no attempt to explain the nature and implications of these demands for practitioners and for lived experience. A potential result of this lapse could be an attempt by practitioners to implement assessment in the emergent paradigm as an inclusion to the residual paradigm of curriculum (Williams, 1980). In the case of a critical emergent paradigm and a technocratic or positivist residual paradigm, conflict between these incompatible modes is inevitable. Hence my attempt here to offer a mode of understanding practice by which educational practitioners can set about the reconstruction of their conceptual schema. The basis of this reconstruction lies in the three conceptions that I refer to earlier. This can ensure that their lived experience is the culmination of a meticulous and on going process of contextualised self-reflection based on premises that are concomitant with the philosophy of the emergent paradigm.

For me this means that educational practitioners have to be researchers in the way that Stenhouse argues as well as subscribers to a critical conception of curriculum that

> does not separate curriculum policy-making, construction and implementation as a linear sequence of events.
>
> (Cornbleth: 1990, 26)

Viewed in this way, curriculum practice (which includes assessment practice) becomes problematised and contested and involves a subtle interplay between the components that make up the contextual reality. For Cornbleth, this reality "cannot be value-free or neutral" (12). In other words, this research report rejects the technocratic model with its claim of objectivity in favour of a conception of lived practice in which all stakeholders interact with their contexts to arrive at a multiplicity of valid realities within a set of agreed parameters that make for consistent coexistence. I now direct attention towards a possible conceptual means to understanding the need for and development of such a set of parameters, using Bernstein (1975) as the basis of my argument.

The Third Layer: How Open-Ended Can Open-Ended Be?

In the preceding section I have contended that the relationship between theory and practice is interactive, and that the nature of educational practice is such that it can and does influence curriculum theory and curriculum policy. I have done this by arguing for a shift from a positivist-technocratic model of theory and practice to a critical view in which the theory-practice relationship is reciprocal rather than linear in nature. Building on this I have argued for a critical view of curriculum as lived

practice. This view incorporates a notion of the educator as an extended research professional. My argument the role that social context contributes to the development of critical curriculum as well as how educators can transform curriculum into a lived practice of learning in assessment. In Chapter 6 I discuss an exemplar that shows how CASS policy and CASS practice can meaningfully influence one another, resulting in a reconstruction of the way in which assessment is understood and implemented. The following diagram illustrates the idea of three layers of understanding that I offer in this chapter:

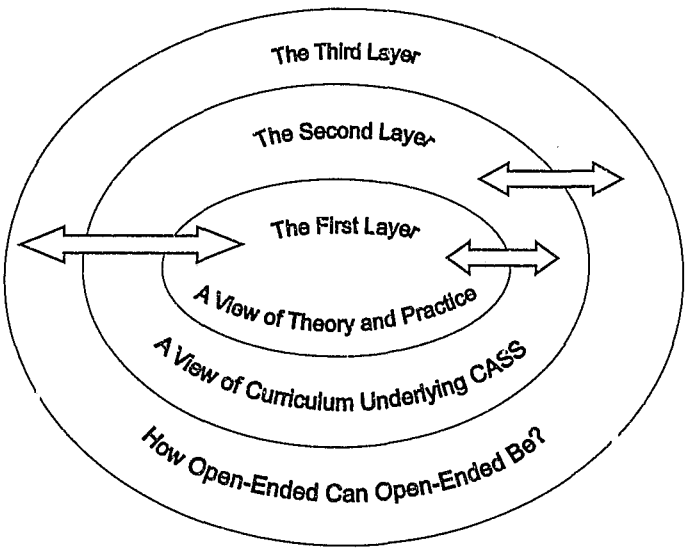

Figure i - Three Layers of Understanding

The model offers a view of reciprocal interaction between the layers in a centrifugally encompassing perspective. In my view, the application of these layers of understanding is a prerequisite to the enactment of a CASS scenario such as that which I describe in this report.

I now focus on the essential characteristic that is common to Fay's critical model, the research model of Stenhouse and Cornbleth's critical conception of curriculum *viz.* its open-ended character. For this work, the quality of an open-ended curriculum practice is the most fundamental trait of CASS. This open-ended property is what allows for plurality of interpretations of the context and a multiplicity of responses to such differences. Such plurality is possible within the context of curriculum development at the level of school practice because of the nature of the structures that shape agents' practice. It emphasises that despite regimentation and regulation through policy, practitioners are relatively autonomous regarding their classroom practice.

However, the characteristic of open-endedness poses a potential problem for the structure and coherence of a paradigm of curriculum with a critical world view as its underlying tenet. I see meaningful boundaries as desirable traits of an implementable, consistent and reliable form of CASS practice. I see the establishment of such boundaries as desirable for two reasons. Firstly it explains the conditions of possibility for CASS as critical social practice within schools. This explanation focuses on the social relations of power that regulate educational practice and differentiates it from other practices of social interaction. Secondly, it explains the process of attaining consistent standards - required by proponents of CASS *cf.* Darling-Hammond (1995) - without ignoring contextual specificities.

Following on the work of Bernstein, I describe the social logic that constitutes the process of curriculum development. In this description I examine the ways in which this social logic embraces particular possibilities and excludes others. In other words, I show how the social logic constructs boundaries for educational practice and for CASS practice. For the investigation of the social nature of these boundaries, I now turn to Bernstein's Class, Codes and Control Volume 3 (1975) and to his analysis of the notions of classification and framing of educational knowledge. These notions offer a set of conceptual tools that can explain how educational practice is constructed from within a process of curriculum that is viewed as contextualised social process. I argue that understanding this set of conceptual tools allows for the enactment of meaningful versions of CASS.

The Bernsteinian notion of curriculum is a view that, like Cornbleth, conceptually transcends traditional, mechanistic, technocratic views of educational transmission. The central question of Bernstein's investigation is

> how a society selects, classifies, distributes, transmits and evaluates the educational knowledge it considers to be public. (85)

Bernstein's curriculum project is essentially a descriptive project. This means that the analysis does not provide moral claims as to what curriculum ought to be. Bernstein has developed a set of instruments that he uses to describe what he sees as the

reality of curriculum. In the course of his description, Bernstein offers two arguments that I see as central to CASS. The first is that there is an intimate link between pedagogy and evaluation (1975, 85). I examine this in order to investigate a dominant requirement of CASS *viz.* the integration of learning and assessment. The second idea is Bernstein's view of curriculum as:

> The principle by which units of time and their contents are brought into a special relationship with each other. (86)

In other words Bernstein argues that curriculum includes not only the tangible products of classroom endeavour but the practice component of classroom knowledge as lived practice.

Bernstein's view of curriculum concurs with Stenhouse's notion of process-type curriculum in that it confirms the presence of an *intersubjective* logic. By an intersubjective logic I mean the logic of contextual interaction between the individual consciousnesses of educational practitioners and learners. This interaction effects the articulation and rearticulation of context and knowledge thereby playing a role in the construction of lived practice. For CASS it implies the rejection of static modes of assessment, such as summative examining as the primary means of assessing learners. The idea of contextual interaction between consciousnesses opens the assessment panorama to notions such as peer and self assessment. However, it is upon Bernstein's notion of *social* logic that governs educational transmission that my argument for the existence conditions of possibility for contextual interaction is founded. I now introduce this logic.

Classification and Frame

Bernstein advances the view that educational transmissions are realised through three message systems that mutually influence one another. These message systems are curriculum, pedagogy and evaluation (85). He views curriculum as determining what can be seen as valid knowledge. Pedagogy determines what can be seen to count as valid transmission of knowledge. The message system evaluation determines what counts as valid realisation of this knowledge by the learner. By implication, there are certain forms of knowledge, transmission and evaluation that are constructed as not valid and it is here where the notion of boundaries act to demarcate the limits of such validity. Bernstein analyses these message systems by showing the ways in which the social logic of his notions of classification and frame condition the nature of and relationship between, the message systems.

Classification refers to "the degree of boundary maintenance between contents" (88) or the extent to which the contents are either insulated from each other or made subordinate to some overarching theme. The notion of classification is, for Bernstein, the primary instrument for describing the message system of curriculum. The stronger the classification, the stronger the boundaries between the different contents are. Weaker classification on the other hand means that boundaries between contents are indistinct or blurred. Classification can operate at

a plurality of levels. For example, it can relate to the extent of insulation between school knowledge and everyday life knowledge, and within school knowledge between broad areas of learning such as social sciences *vs.* natural sciences or between subject disciplines within such an area of learning *e.g.* history *vs.* geography or between areas of study within a subject discipline itself *e.g.* human geography *vs.* geomorphology. For assessment - which falls within the third message system - strong classification means for example, that a science test will not meet the content of a geography test and that of a human geography test will not meet the contents of a geomorphology test, and so on.

Frame refers to "the degree of control teacher and pupil have over the selection, organization, pacing and timing of the knowledge received in the pedagogical relationship" (89). Frame thus determines the nature of the contextual response to classification (25) and as such forms, for Bernstein, the instrument by which the structure of the message system pedagogy can be explained. Strong frame implies that there are strong boundaries between what may and what may not be transmitted, as well as how it may be transmitted, within the pedagogical relationship (88). Conversely, weak frame increases the range of options open to learner and educator as to what will be transmitted and how it will be transmitted. For assessment, weak frame increases the scope of what can be assessed and the ways in which it can be assessed. As is shown in Chapter 6 however, the practical application of this

conceptual extrapolation is considerably more complex.

While classification largely regulates curriculum and frame largely regulates pedagogy, Bernstein uses both classification and frame to describe the nature of the message system of evaluation. He sees classification and frame as jointly regulating lived experience that makes up the process of evaluation. For example, a design and technology CASS item might display integration of the subject disciplines of physical science and English, where a learner is required orally to present findings in appropriate register and the idiom of say, Standard English. At the same time, the details of the assessment item might be explicitly dictated to the learner, such as maximum time allowed and which audio-visual aids are allowed. Weak classification and strong frame thus jointly describe the nature of the CASS item in this hypothetical case. In order to explain the way in which classification and frame regulate evaluation, I turn to Bernstein's typology of "educational knowledge codes" (90). I use these codes to examine the ways in which CASS repositions the educator as a research professional.

Collection Codes and Integrated Codes

Strong classification and frame constitute what Bernstein terms a collection code. The existence of a collection code means that there are strict rules that govern what may or may not be transmitted in the pedagogical relationship as well as how it may

be transmitted. A reduction in classification and frame on the other hand, gives rise to what he refers to as an integrated code, leading in turn to a concomitant relaxation of the limits ascribed to the manner and content of transmission. Furthermore, for both integrated and collection codes, there can be variations in the strength of the code determined by independent vicissitudes in the strength of classification and frame. In other words strong classification, for example, does not necessarily imply strong frame.

Bernstein claims that the movement towards integrated codes serves "to unfreeze the structuring of knowledge and to change the boundaries of consciousness" (111). He thus foregrounds the breaking down of the conceptual boundaries that are associated with a positivist explanation of curriculum. However, his analysis can be used to show that an unfreezing of the way in which we have traditionally viewed knowledge does not suggest that the site of learning becomes an epistemological free-for-all. A fundamental difference between Bernstein and Cornbleth, is that his view allows for an account of curriculum and assessment in which boundaries or limits or regulators of lived practice can co-exist with critical curriculum rather than necessarily being opposed to it.

In The Structuring of Pedagogic Discourse Volume IV (1990) Bernstein develops his notion of codes as "positioning devices" (14). The application of codes as positioning devices can be used

to bolster the insubstantial boundaries of critical curriculum. I show how Bernstein's model allows for an analysis of curriculum, and more specifically of CASS as a member of the critical curriculum family in which structure does not have to be sacrificed in the pursuit of an open and critical system of educational transmission and assessment. His model does this by offering a way in which the boundaries between contexts can be explained. These contexts could be internal to a subject discipline, or between subject disciplines, or in the nature of the social relations between learner and educator or between educator and educational bureaucracy *etc.*. In this regard he makes the observation that

> code is a regulator of the relationships *between* contexts, and, through those relationships, a regulator of the relationships *within* contexts … what counts as a context depends not on relationships within, but on relationships between, contexts … Thus if code is the regulator of the relationships between contexts … then code must generate principles for the creation and production of specialized relationships within a context. The latter relationships, *between*, create boundary markers whereby specific contexts are distinguished by their specialized meanings and realizations. (15)

We could thus say that the relationships between contexts are thus largely regulated by classification or by control over the content that is transmitted (*e.g.* what is assessed as science *vs.* what is assessed as mathematics). Relationships within contexts then are

largely regulated by frame, or by control over the manner of contextual transmission (e.g. what elements make up a legitimate response to the assessment task). This idea is developed in the next section.

Ground Rules and Performance Rules: Towards an Application of Educational Knowledge Codes

Codes as regulators of context enable both educational practitioners and educational bureaucrats to lay down "ground rules and performance rules" (15) that define and determine the nature and form of practice. This regulation operates at a multiplicity of levels. For example, at the level of regulation between the educational bureaucracy and the educational institution, the educator usually experiences practice within a context that is regulated by forces external to the school itself. At the level of regulation between the learner an the educator, it is the educator who regulates the context. Each context thus contains multiple sub-contexts that are foregrounded or backgrounded at different times in order to address varying needs and interests.

Ground rules are those features of a context that enable one to recognise it as the context that it purports to be and to differentiate between one context and another. As such, Bernstein also refers to them as "recognition rules" (15). He explains that recognition rules

> create the means of distinguishing between and so *recognizing* the speciality that constitutes a context (15)

For example, the context of educational transmission has different ground rules to a cricket match and this is what makes these two contexts immediately recognisable as the practice of teaching and the practice of playing cricket respectively. The ground rules of a context determine what constitutes a given community of practice at its most basic level.

In the context of educational transmission, for example, a ground rule might be that there must be at least a transmitter of educational knowledge and a recipient of educational knowledge. Without these elements, it might be argued, there can be no context of educational transmission. Likewise, a ground rule for cricket might be that there must be two teams of eleven that compete against one another in accordance of the laws of cricket. Failing such a ground rule there can be no game of cricket. It is through the assumptions about the nature of a particular type of practice, contained within the ground rules of a particular context that boundaries for contextualised social practice are shaped.

Performance rules are those features that regulate the actions specific to a particular context and that result in a set of relationships peculiar to that context. Bernstein also calls "realization rules" (1990, 15) by. By way of further explanation he observes that

> realization rules regulate the creation and production of specialized relationships internal to that context. (15)

That is, it is through a particular performance set that the internal relationships unique to the context of educational transmission are realised; a different set of performance rules govern the realisation of the contextual relationships that make up a game of cricket, to return to the analogy I made earlier. Realization rules structure the process of framing of the context.

Bernstein postulates that this process is governed by what he calls the hierarchical, sequential, pacing and criterial rules of knowledge acquisition (52-53). In schools, these rules are the instruments by which we "distinguish between modes of transmission/acquisition" (52). Hierarchical rules govern the power basis of social relations within a context. Sequential and pacing rules govern the timing of educational progression and transmission. Criterial rules govern the extent to which recipients within such a context possess knowledge of anticipated conclusions or outcomes and what is relevant in the attainment of these outcomes. Bernstein distinguishes between rules that are explicit or visible and rules that are implicit or invisible. Various permutations of these elements govern the nature of the realisation of the context. For example, in one educational context the performance rules may demand the rigid application of a set of behavioural objectives by a dominant transmitter with recipients that are not made aware of the intended outcomes of the course *i.e.* the criteria or outcomes are invisible. Another set of

performance rules may call for an open-ended form of learner-centred transmission with transparent outcomes. The form of assessment in this case might be CASS based and formative. The policy intentions on visibility in CASS includes, for example, the NDE's emphasis on transparency in the according of marks and record keeping (1996b, 51-7).

Although the comparison between the practice of educational transmission and cricket is a rather crude illustration of a complex notion, it serves to illustrate my point: in both cases the ground rules for educational transmission have been satisfied but the mode of realisation of the context, or the performance rules or the strength of the framing, has varied from one context to another. Likewise, in a game of cricket the hypothetical teams can scrupulously follow the laws of the game, thereby satisfying the ground rules. However, differing performance rules might be followed by different teams or even by different personalities within a team, with a unique realisation resulting from a unique permutation of the ways in which a cricket team can effect the game. Thus, multiple realisations of the ground rules are possible in the realm of pedagogy and assessment as in the game of cricket.

Codes and the Social Logic of the Message System of Evaluation

The preceding discussion is aimed at the operation of a conception of codes as regulators of pedagogical discourse that is used to inform the primary area of focus of this report *viz.* the message

system evaluation. I do this by applying the notion of codes to two opposing forms of assessment: the traditional end-of-phase examination which I associate with a collection code and CASS, which I associate with an integrated code.

Bernstein observes that where a collection code predominates

> the evaluative system places emphasis upon attaining *states* of knowledge rather than *ways* of knowing. (1975, 98)

A striving towards "states of knowledge" (98) will probably be encountered in the hierarchical context typical of collection codes where the pupil is seen as the recipient of all knowledge from the teacher *i.e.* when a linear mode of knowledge transferral is adopted. For evaluation, the strength of collection codes is usually encountered most strongly in two features peculiar to end-of-phase recall-based assessment, the type we have become accustomed to in the traditional, final-examination pattern of formal summative assessment.

The first of these features is the strength of collection code between subjects *i.e.* the extent to which there is strong separation, or closure, between the contents of subject disciplines. For example, a strong collection code would not make room for the incorporation into a science examination of a related historical issue. The relative autonomy of each subject discipline and the hierarchy between them is guarded and reproduced by their insulation from one another. This insulation is entrenched in the classroom when teachers protect their particular subject

disciplines *i.e.* by entrenching the content closure that classifies between one subject discipline and another.

This occurs, for example, when a teacher obstructs potentially educationally meaningful discussion on the grounds that it is not located within the subject discipline appropriate to his or her classroom. Assessment forms of the traditional type then perform a quasi-validational function of this insulation by rewarding its internalisation by learners when they perform well in such assessment. This is probably particularly the case in high-stake summative assessment, such as the matriculation examination. It also contributes to the perpetuation of focus on the surface structure of knowledge in that it does not direct learner attention toward the generic competencies that underlie certain superficially independent areas of knowledge (1975, 102). For example, rather than to memorise a list of causes of the Second World War for the purpose of later recall in an examination, learners could investigate the socio-historical issues that have led to the war. This approach is applicable across a range of different areas of knowledge and contexts, to the extent that they are made subordinate to a generic competency. Integration, or weak classification of this nature, is one of the cardinal elements of a CASS environment.

This feature of content closure also has implications in terms of recognition and realization. It can be argued that the strong classification associated with content closure plays a significant

role in how one recognises a particular subject discipline such as science or history. It is the very existence of such insulation between disciplines that allows one to identify the particularities that determine what science is and what science is not. In a system where subject disciplines are integrated, insulation is diluted because of the lack of content closure and hence the extent to which specialisation makes disciplines readily identifiable as such, is reduced. This factor could ultimately have a role to play in the advancement of generic competencies that transcend the specific competencies of particular subject disciplines. CASS is the mode of assessment most likely to be applicable to this manner of pedagogical practice.

Realisation of the performance rules of a subject discipline is also affected by content closure. Bernstein argues that content closure makes for a more technocratic realisation of the performance rules of a discipline or context, in that the particularities of a discipline are more easily listed as a taxonomy of contents that must be completed during the course. Contents that exist in an open relationship to one another allow for what Bernstein calls "mechanical solidarity" (1975, 110) between contents, meaning that they belong together on the basis of their likeness at a fundamental level: the level of deep structure. Mechanical solidarity between contents is conducive to authenticity of the assessment tasks, thereby making more readily for the integration of learning and assessment.

The second feature is the degree to which the syllabus is explicit, leaving fewer options open for the way in which assessable content is transmitted. This in turn leaves fewer modalities of assessing available, resulting in a syndrome of teaching-to-the-test *i.e.* educational transmission becomes fully committed to dealing with examinable content at the level of the surface structure of content. Restriction to the surface level of knowledge occurs because an explicit syllabus is usually synonymous with voluminous, prescribed, subject-specialised content, probably to make the content more easily examinable owing to its explicit, recall-based criteria.

This characteristic is recognised by the type of syllabus that is filled with examinable content to the extent that there is insufficient time allocated to allow for the deconstruction of knowledge at the site of learning. Its realisation is typified by an emphasis on what is missing from the learner's work, rather than what is there, what Bernstein refers to as assessment procedures that

> itemize the relative failure rather than the positive strength of the acquirer. (1975, 87)

CASS on the other hand, lends itself to a paradigm of construction and reconstruction as well as of deconstruction knowledge as a constituent of the process of learning and assessment. In the discussion of integrated codes that follows, I show how this transpires at a conceptual level.

Where an integrated code predominates

> it involves a change in what counts as having knowledge, in what counts as a valid transmission of knowledge, *in what counts as a valid realization of knowledge*, [my emphasis] *and* a change in the organizational context. (1975, 104)

The existence of an integrated code does not allow for a notion of knowledge as property that can be mechanistically transferred. For evaluation, this means that rote-learning of factual content that is regurgitated in tests has a diminished role to play in the legitimate rendering of assessment practice, such as CASS. Furthermore, because an integrated code implies a focus on the deep structure of knowledge (1975, 102), the significance of the particular content of each subject is reduced. Such reduction in the significance of the particular content of a given area of knowledge is entrenched by its subordination to some relational concept or theme. For Bernstein this means that space is created for a common evaluation system. Such commonality transpires to the extent that a centrifugal development from the deep structure of knowledge outwards can be equated with the shift from a rigidly content-based to a skills-based conception of educational transmission and evaluation. The beginnings of this shift are reflected in Curriculum 2005 in the progression from a notion of subject disciplines to a notion of areas of learning that incorporate a multiplicity of disciplines (NDE: 1997a, 12). Generic competencies thus have an integrative function to perform across the range of assessable contents.

An integrated code thus implies a shift in the performance rules for discourse when compared with a collection code, what is referred to as a paradigm shift in contemporary lingo. CASS is the mode of assessment that characterises this shift. The ground rules at this level of the context of transmission are the Specific Outcomes contained in the learning areas of Curriculum 2005 and the realisation rules are the multiple means and modes of assessment that are enabled from within a CASS approach.

The epistemological shift of perspective towards integrated codes means that the learner can experience a particular set of performance rules from within a plurality of diverse subject disciplines. The learning experience can even be grounded, to some extent, in a personal context physically divorced from the formal site of learning *i.e.* a context of everyday knowledge, thereby confirming the value of the knowledge that the learner brings to the site of learning, rather than rejecting it as irrelevant. The context of realisation is effected in terms of the notions of a critical approach to curriculum, integrated codes and boundaries for practice that operate in a reciprocal relationship with each other.

An integrated code assists in the creation of a learning climate that is amenable to a critical conception of curriculum. This is how I see its significance: relaxed frame is more enabling in terms of problematising received knowledge in the learning context and it helps subvert a notion of curriculum based on pure

behavioural objectives. This implies that the assessment of such problematised knowledge is in turn subjectable to a plurality of means and modes of assessment that have a potential contribution to make in enhancing the hegemony of integrated codes. The existence of an integrated code means that educators can seek ways to subordinate their classroom practice to critical processes that extend the boundaries of outcomes. It does not imply that there are no longer boundaries to educational discourse but rather t. these boundaries need to be formulated such that they can be realised in an educationally meaningful way. This means that educators are pedagogically released to construct and reconstruct CASS practice at the site of educational transmission such that they determine for themselves, as research professionals, the nature of the message system evaluation. The peculiarities of the subject discipline focus are determined by the subjective, professional judgement of the educator. The educator, through CASS practise, balances the enabling and constraining effects of the boundaries.

It also means that educational practitioners themselves can be party to the process of justification of the selected mode of educational transmission. At the level of policy, analysis in terms of integrated codes can be used as an instrument of justification of the extent to which teachers are offered broader or narrower boundaries for assessment practice. The challenge for the educator as reflective practitioner lies in ensuring that the nature of classification and frame is not determined by education

specialists external to the school alone but that they as stakeholders are also part of the ongoing process of assessment as part of curriculum as contextualised social process. Codes thus provide a basis for the development of a framework of boundaries and limits using the notion of classification and frame that can be applicable at a multiplicity of levels across the context of educational transmission. These levels range from the site of interaction between learner and educator through to intervention at the level of education policy. Most importantly for this report, it is applicable at the level of classroom-based development of CASS instruments.

Conclusion

Bernstein originally developed the concepts of classification and frame as instruments for the analysis of how social control and power relations are brought to bear in an educational context (1975, 85). I use them here to show how they can be used to explain how practical boundaries might be determined in the context of the freedoms allowed for in a critical approach to curriculum. More specifically, it shows how an understanding of the operation of these boundaries might enable educational practitioners to achieve equilibrium between instructional discourse (the process of educational transmission) and regulative discourse (the application of boundaries to educational discourse)(183) in their enactment of CASS. The goal of practitioners in this sense is to enact CASS with its dynamic

reconstruction and recontextualisation of a multiplicity of discourses in a regulated context in which the regulative discourse itself is not allowed to attain dominance.

The specific outcomes of Curriculum 2005 can be seen as a form of regulative discourse at the level of recognition rules. They aim to establish coherence, integrity and logic in the construction of an education system with meaningful ground rules and performance rules for critical pedagogical discourse. The realisation of such a critical discourse is dependant on educators as extended research professionals generating desired critical performance sets at the site of learning. As Bernstein observes:

> the collection code is capable of working when staffed by mediocre teachers, whereas integrated codes call for much greater powers of synthesis, analogy and for more ability to both tolerate and enjoy ambiguity at the level of knowledge and social relationships. (1975, 108)

Such ambiguity is represented not in CASS documentation, but in an appropriate professional approach to assessment discourse. In this work, appropriacy is embodied in a complex pattern of critical pedagogy, including the educator as a research professional.

In Chapter 6 I examine an exemplar of process-type, critical assessment practice. The exemplar reflects a synthesis of critical, research-based CASS practice with dynamic, regulative, boundary-establishing and maintaining features.

Chapter 5

Methodology

Introduction

Lawrence Stenhouse observes that research is "systematic inquiry made public" (in: Murphy & Torrance: 1988, 74). He adds that

> Such inquiry is a response - alternative, for example, to prayer or contemplation - to a problem, and it aims to solve the problem by the achievement of understanding. Two kinds of problems of understanding to which systematic inquiry is a possible response are: problems of understanding the world in which we are called upon to act and problems of understanding what we ought to try to do. (74)

Stenhouse thus adroitly identifies the two problems that stand central to most flavours of curriculum issue (which includes assessment issues). The two curriculum problems that he identifies are addressed by this research.

The first of these, the problem of "understanding the world in which we are called upon to act" (74), is addressed in this research in three main ways. Firstly, I outline the origins and current status of the official position on CASS at the level of the NDE and the GDE (Chapter 2). Secondly, I place the official position against the context of the international perspective on CASS (Chapter 3). Thirdly, I offer a detailed conceptual account of CASS (Chapter 4). This type of account makes a crucial addition

to understanding the nature of the paradigm shift and the cognitive demands that it places upon educators. The second problem, that of "understanding what we ought to try to do" (74) is encapsulated in a systematic description of an exemplar of CASS practice (Chapter 6). The discussion of the exemplar is intimately grounded in the conceptual framework that I proffer in chapters two to four. Seen as a unit, this research is my conceptual response to the need for educators to simultaneously understand two facets of CASS practice: firstly the context in which they enact assessment strategies and the nature of their engagement with this set of strategies and secondly the nature of the transformation of this set of strategies into assessment practices.

A Naturalistic Study

The two facets of CASS practice that I refer to above, invoke two different methods of inquiry. The first facet - the context of CASS and how educators engage with that context - is driven by a cognitive research methodology composed of two main cognitive mechanisms. Firstly, it operates in terms of an understanding of the principles of the NQF, which I abstract to the overarching principles of legitimacy, integration and flexibility. Secondly, I show how engagement with CASS and its contextual principles is best understood by examining it from the perspective of curriculum theory. Together, these mechanisms make up a paradigmatic tool for understanding the facet of context and contextual engagement.

The second facet - the enactment of CASS at the site of learning - is driven by an analysis of an exemplar of CASS practice. Even though the exemplar of practice as such, is foregrounded in this facet of the research, the originality of its structure and composition cannot be fully understood without the perspective on curriculum proffered in the first part of the research.

Seen overall, the research mode of this report is best described by the term "naturalistic" (Jackson in: Apple, Subkoviak and Lufler: 1974). Jackson notes three distinctive features of a naturalistic research methodology *viz.* methodological eclecticism, the absence of a formal hypothesis and its maximally unobtrusive nature (84-5). I now use these features as a basis to describe the methodology of my research.

"Methodological Eclecticism"

Jackson describes methodological eclecticism as follows:

> The author-investigators, often aided by one or more assistants, have spent from a few weeks to more than a year … looking at what goes on in [schools or classrooms], talking with participants … To capture what they have seen and heard, they have taken field notes, kept diaries, tape-recorded interviews, collected memoranda and other pertinent artefacts, and on occasion even administered paper tests and questionnaires of a conventional sort. :)

In this section I use the idea of methodological eclecticism to circumscribe the variety of research methods that make up the research undertaking *per se*. The triangulation of the research is achieved through a variety of methods, which includes interviews, observation of practice and questionnaires. I now describe the way in which I applied these methods.

The Interview

I conducted numerous detailed interviews with the head of the Design and Technology Department. Some of the interviews were recorded on audio tape with consent, whilst for those where circumstances did not allow, I took written notes of the responses. The quotations that I use in the presentation of my findings do not include the actual pauses and hesitations of natural speech. This approach allows for easier reading and a complete transcription makes no especial contribution to the reader's understanding of the content or the context.

The interviews were loosely structured in an effort to allow for the exploration of issues important in the conceptualisation and enactment of CASS. This approach allowed the respondents to freely offer illustrative cases and to digress when they felt moved by a particular suggestion or development in the discussion. The interviews thus followed the format of a structured conversation rather than a formal interview. I avoided pursuing a structured interview out of the concern that some responses might be lost

that would have made a valuable contribution. However, even within the loose and discursive nature of the interviews, certain themes were pursued. These themes include the nature of assessment and CASS, school-based curriculum development, the subjectivity of assessment criteria and the paradigm shift underlying successful CASS enactment. This facilitated the management of the raw interview data as well as the possibility of follow up interviews.

A further interview was conducted with the head of curriculum of the school in order to ascertain the extent of meaningful CASS interventions in the school as a whole. He confirmed the notability of initiatives of the Design and Technology Department. and noted that such initiatives are not a general practice in the school. The focus in the interview with the head of curriculum was on the difference between the state of assessment in design and technology and the other subject disciplines in the school.

Observation of Classroom Practice

I undertook non-participant classroom observation for the ten week period covered by the exemplar under discussion. I attended the classes spanned by the project, totalling three to four half-hour periods per week. This ultimately proved sufficient to attain an important objective during the observation phase: to ensure that implementation of the objectives that flowed from the interviews was taking place at the site of instruction. There was no contradiction between the stated and the actual, for example

integration of diverse subject disciplines (weak classification) was taking place in a structured learning environment (strong frame).

The Questionnaire

The staff body of forty educators completed a CASS questionnaire in 1997 and the same questionnaire again in 1998. The primary objective of the questionnaire was to ascertain educator opinion about specific CASS issues in the exemplar school (the complete questionnaire, and the results obtained from it, are contained in the appendix to Chapter 6). The aim of administering it in two consecutive years, was to ascertain the extent of opinion change regarding CASS over a one year period. In Chapter 6, I discuss in detail those responses where this change or dearth thereof from 1997 to 1998 was notable.

The questionnaire is made up of two main sections. In the first section, questions one to eight require a response from the educator regarding CASS as such, whilst questions nine to twelve relate to broader issues related to CASS implementation. The questionnaire structure requires respondents to check response boxes indicating the strength of their agreement or disagreement with a set of statements about CASS. Space was also provided for any additional comments that the respondent may have. This space was not utilised by the respondents.

"The Absence of a Formal Hypothesis"

The second feature of a naturalistic study that Jackson (1974) identifies is "the absence of formal hypotheses as guides to the inquiry" (84). In this regard, he observes that

> The seemingly directionless and somewhat opportunist character of this approach does not mean that the final product lacks structure or that in the course of his work that the investigator eschews the customary goal of seeking to bring order out of chaos. (84)

I did not set out to prove or disprove a specific research hypothesis. Rather, I aimed at an analytical description of an exemplar of CASS practice. As such, the divergent phase of the research was an important element of the project as a whole. Cronbach (1982) describes the divergent phase as

> Opening one's mind to questions to be entertained at least briefly as prospects for investigation … Naturalistic and qualitative methods are particularly suited to this work because, attending to the perceptions of participants and interested parties, they enable the evaluator to identify fears that may not yet have surfaced as policy issues. (210)

The result of the absence of a formal hypothesis lends itself, I believe, to a more balanced research report in that my focus is on critical descriptive analysis - from the official position, through the literature review and conceptual framework to the exemplar of practice. This means that I have unpacked the issues

at stake, thereby capturing areas of concern for the educator. The qualitative nature of this report as a whole, contributes to an enhancement of the reader's understanding of CASS implementation, without the potential distraction of a formal hypothesis. The research is guided and given focus by the special consideration given to Bernsteinian codes and the impact of the discourse of boundaries and parameters on CASS as an ostensibly open-ended system of assessment.

"As Unobtrusive as Possible"

Jackson notes thirdly in his features of naturalistic studies that the naturalistic observer tries to be "as unobtrusive as possible" (85). He adds that

> This unobtrusiveness is in sharp contrast with the experimental techniques that disrupt the natural conduct of educational affairs. The naturalistic observer is, in a sense, more respectful of the phenomena under investigation than his experimental counterpart. Figuratively, if not literally, he tiptoes through classrooms and corridors, listening more than speaking, observant more than observed. (85)

I noted in my description of observation of classroom practice that my role as researcher was in a non-participatory capacity. The notion of "listening more than speaking, observant more than observed" (Jackson: 1974) is crucial to the research mode that I pursued.

Short of covert video surveillance, it is not possible to be completely unobtrusive as the researcher in observation of classroom practice. However, in my case, my presence was made somewhat less obtrusive by a number of factors. Firstly, I am known to the learners in the case study and my presence was not a novel experience that distracted them to an unusual degree. Secondly, the lengthy period of the observation phase made my presence in the classroom part of the normal flow of events. Even if my presence was a little unsettling at first, my note-taking attendance was soon hardly noticed in a remote nook of the classroom.

Conclusion

When considered in union, the characteristics of naturalistic investigation that Jackson identifies (methodological eclecticism, the absence of a formal hypothesis, unobtrusiveness), make for a research methodology that contrasts with the psychometric tradition of educational research. This is to say, the infatuation with statistical methods employed in what is often a zealous pursuit of so-called research objectivity, probably has no great role to play in naturalistic studies.

As far as objectivity is concerned, it would be naïve to assume that the methodology that I employed gives fully objective and perfectly balanced truths. As noted by MacDonald and Walker (1977)

> Case studies are always partial accounts, involving selection at every stage, from choosing cases for study to sampling events and instances, and to editing and presenting material. Educational case-studies are almost always conducted under constraints of time and resources and therefore reliability and validity pose considerable problems. (187)

However, having qualified my research by confirming the inevitability of its subjective nature, I must add that this is counteracted by the rigour of the conceptual account in which I locate CASS in terms of curriculum practice.

The strength of the methodology lies largely in the rigorous conceptual account of CASS that I offer. At the same time, my analysis of CASS in terms of curriculum practice constitutes a response to the issue of the paradigm shift that is required for the implementation of CASS. This approach serves to clarify for the reader the nature of the cognitive changes they are expected to internalise

Chapter 6

An Exemplar of CASS Practice

Introduction

Why Design and Technology?

In Chapter 4 I showed how a linked group of conceptions is fundamental to the understanding of CASS in this report. These conceptions include the reciprocal nature of the relationship between theory and practice, a critical view of curriculum, and the notions of classification and frame. I explain how these conceptions allow for an understanding of curriculum as a critical practice that does not accede to the lack of structure that some see as being commensurate with an open-ended assessment system such as CASS. I have shown how the principles underlying the Curriculum Framework, *viz.* legitimacy, integration and flexibility (explicated in Chapter 2), are tempered by the application of classification and frame as boundary maintainers. In the analysis that follows, I show how the conceptual points of departure are realised in a case study of a structured implementation of a CASS project.

Design and technology enjoys especial closeness of fit with the basic tenets of the Curriculum Framework (NDE: 1996a) and Curriculum 2005. These attributes are reflected in the Range

Statement that

learners should engage in processes of:

investigating (research, etc.)

planning and designing

developing (constructing, making, modelling etc.)

evaluating (measuring, testing, deciding etc.).

(NDE: 1997a, 86)

Design and technology emphasises not only what learners know but also what they can do (NDE: 1996a, 16) - it is a subject in which the assessment criteria resonate with the notion of "culminating demonstrations of the learner's achievement" (NDE: 1997a, 13). The modality of the verbs in the Range Statement reiterates the notion of learner responses as actions. The point is this: the value of design and technology as a suitable subject discipline for the research presented in this work is enhanced by its affinity with the Official Position. That is, there exists a potentiality for a minimal disjuncture between policy and practice in the implementation of CASS in design and technology, due to the relative lack of prescriptive policy, thus repudiating the positivist position. I see this as an application of the ideas about the relationship between theory and practice in a critical paradigm of curriculum that are propounded in Chapter 4.

In Curriculum 2005, the Learning Area of Technology is the umbrella beneath which the subject discipline of design and technology is situated. The NDE sees technology as a broad area of learning, that entails

> the use of knowledge, skills and resources to meet human needs and wants, and to recognise and solve problems by investigating, designing, developing and evaluating products, processes and systems. (1997a, 84)

This view suggests that problem-solving is central to this learning area, with the actual means to such problem-solving drawn from an open-ended diversity of appropriate forms of enquiry and practice. The idea of diverse possibilities for problem-solving lends itself to the practice of school-based curriculum development and therefore, I believe, to the reprofessionalisation of the educator, which I investigate at the end of this chapter.

In terms of the statement of specific outcomes, learners must be able to do the following:

1. Understand and apply the Technological Process to solve problems and satisfy needs and wants.
2. Apply a range of technological knowledge and skills ethically and responsibly.
3. Access, process and use data for technological purposes.
4. Select and evaluate products and systems.
5. Demonstrate an understanding of how different societies create and adapt technological solutions to particular problems.
6. Demonstrate an understanding of the impact of technology.
7. Demonstrate an understanding of how technology might reflect different biases, and create responsible and ethical strategies to address them. (NDE: 19[illegible] a, 84)

In the absence of a highly prescriptive national curriculum, these outcomes function as a setting against which there can be movement towards describing and developing design and technology as a body of knowledge and as a school subject discipline in which learning and assessment can be successfully integrated.

The outcomes provide a substructure for school-based curriculum development within the subject discipline of design and technology, in that they make substantial reference to technology *per se* as an important vehicle of problem-solving. These outcomes provide a beginning for meaningful engagement with the process of educational transmission in design and technology. The formulation of such outcomes, rather than a prescribed syllabus, offers an opportunity for school-based curriculum development to those who are sufficiently moved to effect it. The idea of school-based curriculum development highlights the weak frame intrinsic to the official position. The NDE's set of specific outcomes functions as a backdrop against which motivated educators can plan the direction of the classroom interaction that makes up the process of curriculum in design and technology. I will show how, in this exemplar, educators as researchers have implemented an effective CASS program that relies on school-based curriculum development. I now sketch the nature of the school environment in which the exemplar is located. A sense of the setting is crucial to a full appreciation of the significance of the exemplar, because it highlights the unique nature of the curriculum interventions that have culminated in the CASS project under investigation.

The School as a Developing Milieu

The school is structured hierarchically. Management is pyramidal and top-down, displaying the classic ranked hierarchy from headmaster, to deputy headmaster, to head of department, to teacher. The hierarchy is entrenched in the learner body with a similar top-down leadership structure from the head boy down to the form one (grade eight) learners who are at the base of the pyramid. Assemblies, staff meetings and the like are all geared towards embedding and validating the hierarchy, for example, the headmaster talks and everybody else listens. At the same time, however, there are visible undertakings to assimilate the shift towards greater democratisation of the hierarchy, through structures such as the student council and student and staff representation on the governing body. These structures do not operate at an executive level and as such have no meaningful impact on the embedded rituals and hierarchies that constitute the tradition of the school. I see the ritualistic and rigidly hierarchical nature of the school as problematic for critical curriculum practise.

In an interview (07/1998), the school's head of curriculum (who is the deputy headmaster and monitors all curriculum activity in the school) indicated that the school as a whole was not following the spirit of CASS, adding that "it won't happen until we see it formally counting for Matric". What this means is that a sense of

research professionalism has not fully permeated into the curriculum practice of the school. Although CASS marks for every subject were requested by the GDE for 1998 (Circular No. 48/1998), these marks were used for statistical purposes only. The intention then, was to incorporate the CASS mark into the 1999 Senior Certificate examination. The GDE has now done so (Circular No. 8/1999), albeit to a very limited extent (a maximum of 10% of the final mark). In the view of the head of curriculum, CASS is being innovatively implemented only in the Design and Technology Department and the Afrikaans Second Language Department. He adds that the Science Department has implemented CASS on a trial basis with the Grade 10 group, while the History and Geography Departments make use of project work of a conventional nature. The difference between design and technology and what the rest of the school is doing is that learners in design and technology are not always "studying for a test" (Interview: 07/1998).

In order to test the extent of CASS activity in the school, I ascertained which departments subscribe to CASS as a form of alternative assessment. Discussions with educators from the various departments during the course of 1998 corroborated the view of the head of curriculum that this engagement is not pervasive across all the subject disciplines. As for design and technology: not only are they meaningfully enacting CASS, but their approach stands out as an example of good practice, in particular due to their idea of the integrated relationship between learning and assessment. The innovative efforts of the

Design and Technology Department to come to grips with the spirit of CASS stand in contrast to the reticence of others.

A common perception among educators is that CASS is nothing new. The GDE too has made this observation at their CASS workshop (1996c, 2). This perception is partially true, for CASS has been in use in England at a relatively sophisticated level for more than twenty years (*cf.* Hoste and Bloomfield: 1975). In South Africa too, certain well known (although not overused) practices, such as project and group work form part of what is now contained in the official vision that is intended to impel CASS practice in schools:

> a feature of [CASS] is that a variety of assessment techniques needs to be used e.g. projects, assignments, action research, class tests etc. (GDE: 1996a, 5)

However, the majority of heads of department in the school seem to have adopted the view that no comprehensive changes are demanded of them by the new assessment vision. Upon completion of a CASS questionnaire (see Appendix B and C of this chapter), many educators at the school said that CASS is something that has always been done there under a different name. There seems a general lack of interest in movement towards any new mode or means of assessment. This situation has been exacerbated by the abortive efforts at the level of the bureaucracy, that has been powerless to counteract institutionalised apathy toward assessment innovation such as CASS. The school, like most others in South Africa, is experiencing an interregnum in terms of curriculum: it

finds itself between the recently despatched hegemony of the previous regime and the ascending sovereignty of the new. Such a situation of transformation can be a source of confusion for educators that were comfortable with the operation of the curriculum procedures of the past, possibly entrenching the stasis.

In order to test educator sentiment on certain CASS elements as well as factors such as educator bewilderment by CASS, a questionnaire was administered to forty educators who make up the full academic staff complement at the school in which my exemplar is located. This took place in 1997, at a time when CASS had been newly introduced to GDE schools. The same questionnaire was administered to the same group of educators the following year, in 1998. The questions are loosely based on Desforges (1990, 36) and the complete questionnaire and results from 1997 and 1998 are contained in Appendix B and C of this chapter respectively.

In the paragraphs that follow, I select a sample from the 12 questionnaire items, responses that demonstrate continuity and change between the opinions of 1997 and the opinions of 1998. When asked in 1997 whether they had to learn new knowledge in order to implement the new approach to assessment (response 9), 11% of respondents disagree strongly, while 11% agree strongly. In 1998, the strong polarity in responses still exists but the even distribution between the poles has skewed towards agreement with the view that the acquisition of new knowledge is required, with

5% of educators that strongly disagree and 16% in strong agreement. The nature of the shift is illustrated in Figure i below.

11	21	14	43	11	1997
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
5	11	32	36	16	1998

Figure i - The need to learn new knowledge in order to implement the new assessment.

The change suggests that as educators have become clearer on what CASS means, they are also becoming aware that its implementation implies that the acquisition of new knowledge is a prerequisite for its meaningful implementation. However, whilst only 14% of educators had a neutral response last year, 32% are now neutral. Although this suggests a shift away from disagreement, this might indicate that these educators are still not fully aware of the extent of the conceptual shift demanded by the implementation of CASS. Overall, there has been no significant change in the number of educators who concede that new knowledge is required from 1997 (54%) to 1998 (52%). The most encouraging shift of opinion is the drop from 11% that strongly disagree in 1997 to 5% in 1998.

Asked whether the new assessment system implies added work load without recognition (response 12), in 1997 15% of respondents disagree strongly whilst 18% agree strongly. On this question, the percentage of educators who are in overall agreement remains

essentially unchanged in 1998. However, while 38% disagree overall in 1997, only 16% disagree overall in 1998. The largest single group of educators (32%) feels neutral in 1998. The shift is illustrated in Figure ii.

15	23	11	33	18	1997
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	
0	16	32	26	26	1998

Figure ii -

Added work load without recognition.

There is thus a strong movement in responses towards agreement with the statement that CASS means more work for educators. This suggests that an improved understanding of CASS has brought with it an appreciation of the initial effort required for its successful implementation.

Anxiety about standards (response 11) has not varied greatly from 1997 to 1998. Whilst 62% of educators are concerned about standards in the implementation of CASS in 1997, 68% were concerned in 1998.

10	10	18	29	33	1997
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	
0	16	16	42	26	1998

Figure iii -

Anxiety about standards.

Whilst Figures i and ii draw attention to polarisation of educator opinion, there are areas where there has been a shift towards greater consensus among educators. For example, in 1997, 63% of educators felt that all parties are unclear about how CASS works. In 1998, only 23% of educators felt this way. The number of educators of the opinion that there is now clarity on the issue of CASS has doubled from 26% to 54%. In Figure iv, this change is clear.

22	41	11	19	7	1997
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	
9	14	23	40	14	1998

Figure iv -

All parties - educators, learners, parents - are clear about how the assessment system works.

Seen overall, the change in responses to the questionnaire from 1997 to 1998 seem to be indicative of a change in educator consciousness regarding CASS. Such a change in consciousness can only, I believe, be assessed by the extent to which it is reflected in changes in practice. It would seem that there has been not been a concomitant shift in practice to match the shift in what educators think. This unevenness between consciousness and its transformation into action is possibly explained by MacDonald and Walker (1977). They assert that

> education has a highly developed and longstanding mythology which acts as a protective public image projected by its members. At all levels of the system what people *think* they are doing, what they *say* they are doing, and what they in fact *are* doing, may be sources of considerable discrepancy. This is generally as true of children in class as it is of teachers, head teachers and administrators. (186)

In the light of these claims, the findings of the questionnaire can be treated with a degree of circumspection, especially when considered in conjunction with observation of the head of curriculum that CASS has not been implemented globally within the school.

In conclusion I revisit my point on the partiality towards ritual and tradition in the school. I turn briefly to Bernstein's argument on ritual in schools in order to describe the conceptual mechanisms by which such ritual is preserved and reproduced. Concisely stated, he suggests that rituals are the apparatus by which consensus in the social order is achieved and reproduced. There are two types of rituals, according to Bernstein. Firstly, consensual rituals, such as assemblies and other ceremonies as well as dress and other imagery as well as punishment and reward, serve to bind staff and pupils into a moral community (1975, 55). Secondly, there are differentiating rituals, that function to entrench the boundaries between age groups and the relations between age groups and other fictitious groups such as houses (57). Seen together, Bernstein claims that

> These two main types of rituals are major mechanisms for the internalizing and revivifying of social order. They function to maintain continuity, order, boundary and control of dual loyalties and ambivalence. The rituals control questioning of the basis of the expressive culture and so are conditions for its effective transmission and reception. They buttress the formal authority relations and evoke respect through the ritualization of difference and similarity of function; they create concinuity in individual and social time and relate its derived norms to an approved external order. (56)

This argument on ritualistic practices contributes to an explanation of the difficulty that some educators are experiencing in the infusion of change into contemporary social reality. It is important for understanding the developing milieu of the school in that it aids in explaining the institutional constraints that face educators in embracing the paradigm shift that is required in order to enact CASS.

The notion of ritual and the idea of protective mythology together might explain the contradiction between the public views of the educators and their assessment practice. For example, educators say in their questionnaire responses (especially Figure iv) that they fully understand CASS. However, observation of their assessment practices by the head of curriculum reveals that traditional assessment methods prevail. Similarly, the GDE has publicly espoused CASS ideals, but the matriculation assessment is 95% summative (GDE: 1999, 2).

Finally, the concept of ritual aids in understanding the extent to which there is resistance to change in assessment practices, because it carries out a reproductive function in respect of the relationship between educator and learner in the process of educational transmission. The highly traditional nature of the school under examination relies in a sense on the established power relations between teacher and taught. There is no question that in this environment the learner is subordinate to the educator in every respect. Since CASS implies a shift in the nature of this relationship, a contextual adjustment is necessary for meaningful CASS implementation. To date, this shift has been enacted only in the subject discipline of design and technology. It appears that in most of the other subject disciplines, this shift has not occurred to any meaningful extent, if at all. In a highly ritualised environment it is not inconceivable that the reproduction of ritualised relations of top-down authority has become spontaneous and covert because it has been in place for many decades.

I now redirect attention from the rationale for selecting design and technology and a description of the school as ritualistic and hierarchical in nature, towards an analytical description of the CASS project. The first part of this analysis, which follows in the next section, outlines the origins and basic design of the of the project in terms of the professional judgement of the educator, who is the principal architect of the project.

Design and Technology: Basic Design and Educator Perspective

Origin of the Course

The design and technology CASS instrument has developed from a theme-based extended project that is taught over a ten-week period. For John, who is the head of department, the largest portion of assessment must be structured around project work. Elaborating on the idea of project work, John says that

> the thrust of the methodology is directed at encouraging the learner to become actively engaged in the learning process through interaction with the subject materials and theory … the process of learning is by practical experience.
>
> (Interview: 09/1997)

The course content draws on the ORT-step curriculum in terms of methodology, particularly the integration of theory and practice. The ORT-step view is detailed at http://www.ort.org/edu/edu.htm. John has interpreted parts of the South African version of the ORT-step technology curriculum to make it more "sympathetic and relevant for this school" (Interview: 06/1998). He adds that

> it might not be so with schools in rural areas: they would have to re-interpret and tailor it to fit their different learner circumstances. (Interview: 06/1998)

John has thus not simply applied the curriculum form to the local context. He has selected from a multiplicity of sources in order to meet his specific curriculum and assessment requirements.

Basic Design and Selection of Material

The basic design of the CASS exemplar is that of a ten-week project, leading to the production of a portfolio. The process of instruction and assessment is fully integrated. Similar projects are run for each of the four annual school terms, with each project focusing on a different area of specialisation within the subject discipline. The project features both group work, intimating weak frame, as well as individual work. John is of the opinion that it is important for group work to take place because it stimulates interaction.

He balances this with the importance of recognising individual effort. He maintains that project work at the level of the individual allows for "free reign of the learner's talents … where working in a group might be limiting" (Interview: 09/1997). In this light, the project incorporates group work and interaction between learners in the classroom context. The allocation of marks though, is on the basis of individual work alone. He is of the view that the ideal system is a combination of group and individual work as this "parodies real life situations" (Interview: 09/1997). There is thus a concern with the notion of the authenticity of the assessment at the level of the deep structure of the assessment task itself. Deep structure authenticity in this case implies that the authenticity does not exist only at the level of content but at a level that emulates

the way in which adults may interact in the workplace. Some of the individual project work is publicly assessed by the peer group, adding diversity to the assessment methods. The weak classification of learners is illustrated in John's approach as described here.

The portfolio includes all work that the learner has completed for the course. Work that was not completed or incorrectly completed is updated and upgraded prior to submission for final assessment. Throughout the development of the portfolio, the learner has kept a record of marks awarded for the various items of work and can refer back to his personal scheme in order to identify areas that require additional attention prior to final submission. Then, learner and educator focus together on the identified areas of weakness and incomplete understanding. It is thus similar to the experience at CPESS (Darling-Hammond *et al*: 1995), where individual items are assessed during the progress of the course but the final product is seen as more than the sum of its parts. Assessment design in design and technology is as much an issue of general curriculum as it is an assessment issue, the exemplar under analysis reflecting full integration of learning and assessment. The issue of selection of material for study is thus integrated with the issue of selection of assessment material. It is also an example a of school-based curriculum development initiative, in that the educator is the primary agent of construction of the CASS instrument.

The selection of exactly which elements are studied and assessed lies in the professional judgement of the educator. Issues that John sees as important in the selection of material include the level of basic motor skills, maturity, and the prior tools and materials experience of the learner. A social factor that influences selection is what John refers to as the prevalence of a strong

> anti-techno culture [in which] anything technological is connected to blue collar activity and is to be shunned.
>
> (Interview: 1997)

However, for John the most important and practical limiting factor in the selection of content is the high cost of infrastructure. While he does observe that there can be innovative use of materials and facilities to overcome the restrictions effected by an inadequate infrastructure, the degree of technical sophistication and authenticity that can be expected of a learner is in some measure dictated by the quality and availability of tools and materials. In the school where this research was conducted, such infrastructural considerations are not a limiting factor.

I now shift the emphasis towards the main thrust of this research *viz.* towards the way in which the enactment of the CASS project in design and technology is subjected to the application of varying levels of classification and frame by the educator acting as a research professional.

Weak Classification and Strong Framing: Issues in the Contextualisation of Design and Technology

Introduction

Classification is a term that Bernstein uses to describe the degree of boundary maintenance between contents (1975, 88). Design and technology is characterised by weak classification. Frame refers to the degree of control over the selection, organisation, pacing and timing of transmitted knowledge (1975, 89). For Bernstein, weak classification and frame result in an integrated type curriculum, whilst strong classification and frame lead to a collection type curriculum. In this instance however, we encounter weak classification combined with strong frame in an *integrated* code. For Bernstein,

> It is important to realize that the strength of classification and the strength of frames can vary independently of each other. For example, it is possible to have weak classification and exceptionally strong framing … frames may be examined at a number of levels and the strength can vary as between the levels of selection, organization, pacing and timing of the knowledge transmitted in the pedagogical relationship. (1975, 89)

It is the deployment of weak classification and strong frame in an integrated code that makes John's model uncommon, inasmuch as strong frame is usually the precursor to a *collection* code.

The project topic, "Communications: Drawing & Graphic Representation & Elementary Modelling", relates to one of the main technological areas of study identified by the GDE's Learning Area Committee (LAC) for Technology Education. John points out that the LAC, of which he is a contributing member, has identified seven technological areas of specialisation within the subject discipline for secondary schools. They are:

1. Systems and Control
2. Energy and Power
3. Structures
4. Materials
5. Information and Communication
6. Processing
7. Safety (Interview: 09/1997)

He notes that there are links between certain of these areas of specialisation and that the linked areas should be taught as units. For example, he believes Systems and Control, and Energy and Power are interrelated. They can therefore be offered in a single, integrated course. Similarly, Structures and Materials form a logical unit. The remaining units *viz.* Processing, Safety, and Information and Communication are, in his view, sufficiently independent to be handled individually. A fundamental beginning to John's approach thus lies in his view that there are points of convergence between the constituents that make up the area of technology. In Bernsteinian terms, John aims to reduce the extent of classification between these constituents.

The way in which the educator recontextualises these areas in terms of curriculum and assessment practice is important to John. He explains that the seven technological areas can be taught in terms of identified contexts that have pertinence in the home, school, office, factory and workplace. One or more of these contexts is drawn on at the site of delivery to locate as much subject content as possible within the learner's frame of reference. The potential for such multiplicity of contextualisation levels is related to the weak classification of this learning area. The named technological areas can be conceptualised as areas of pure academic endeavour that are applied to the type of connection point identified above (home, school *etc.*). Two points are thus paramount to John's understanding of assessment practice. These are firstly, the integration of areas of knowledge previously regarded as componential or modular and secondly, the recontextualisation of formal knowledge into applied knowledge, or school knowledge into everyday knowledge. For John, such integration and application are intrinsic to the mode of curriculum practice required for effective CASS in the subject discipline of design and technology. I show in the remainder of this chapter how John's notions of integration and application are comparable with Bernstein's notions of classification and frame respectively. My main aim in this section is to analyse John's approach to assessment in the design and technology exemplar of CASS practice in terms of the notions of classification and frame.

Weak Classification of School Knowledge and Everyday Knowledge

The relationship of weak classification between school knowledge and everyday knowledge is in this case in fact a function of strong frame in the nature of the pedagogical practice. This can be explained by considering that in John's view, increased authenticity (*i.e.* weak classification of school knowledge and everyday knowledge) is directly attributable to increased strength of frame. Bernstein explains strong framing as a way of describing a pedagogical relationship in which

> the transmitter controls the selection, organization, pacing and criteria of communicants, together with the arrangement of the physical location. (1990, 37)

Such control is of the utmost importance to John, because in his view, regulation of time, cost and material contributes to the authenticity of the task in that similar sets of parameters apply not only to design technologists in the workplace with the deadlines and specific requirements that they must meet but to almost any conceivable aspect of contemporary social practice (Interview: 02/1998). Authenticity is thereby entrenched not only at the level of the product itself but also at the underlying level of the process of production. This is important because, as Newmann and Archbald observe, when achievement at school is authentic, it

> is likely to transfer more readily to life beyond school, which increases the efficiency of our investment in schooling. (1992, 75)

In the exemplar we thus encounter authenticity at the surface level and the deep level of the assessment task.

Bernstein notes that the strength of frames can be seen as

> the strength of the boundary between educational knowledge and everyday community knowledge. (1975, 89)

This implies, from a Bernsteinian perspective, that an increase in the strength of frame indicates reduced authenticity. For John, this notion is controverted by his exemplar in that just the opposite occurs: while he increases the strength of frame, he is simultaneously increasing the authenticity of the assessment project. Thus, rather than being a restrictive pedagogical practice, strong frame is structured as an enabling factor in this project to the extent that it reduces the strength of classification between school knowledge and everyday knowledge. This weakened classification operates more at the level of the processing of this knowledge, than at the level of content. Weak classification of school knowledge and everyday knowledge is thus enhanced by strong framing of the process of curriculum, thereby increasing the authenticity of the CASS task.

Weak Classification and Recontextualisation of Disciplines

A circumscription of the group of activities that makes up design and technology is elusive. Caborn, Mould and Cave (1996) are school textbook authors who describe the common feature of these activities as

> identifying a problem, thinking about it and realising the solution. (1)

In order to arrive at solutions to problems, the subject discipline of design and technology draws on a multiplicity of areas of practice, including the arts and crafts (59), natural sciences (170), social sciences (4) as well as technical (181) and industrial skills (328), making it an all-inclusive field of endeavour. In the area of the arts, for example, the skills of drawing, including freehand sketching, drawing with instruments, the use of various media and presentation of work are learnt.

In design and technology, multiple fields of endeavour (natural and social sciences, arts and crafts, technical and industrial skills *et al*) are recontextualised to suit the requirements of the discipline. For example, in the study of energy and power, concepts of physics are made applicable to illustrative cases in the home, in nature and in the workplace (Caborn *et al*: 1996, 170-180). The way in which conventional, pure school subject disciplines such as physics are recontextualised in design and technology is by examining them in a more applied fashion *i.e.* in a way that implies a decrease in classification when compared with traditional teaching approaches. For example, an understanding of the principle of levers might be applied in response to the following practical problem based in the home:

> Design a simple mechanism incorporating a cam, to enable a person with a weak grip to open a coffee jar with a screw top. (384)

In this example there is a further level of weak classification, between school knowledge and everyday knowledge. Another example of weak classification lies in the emphasis on the use of language and the quality of the spoken delivery demonstrates a concern with multi-disciplinary and inter-disciplinary curriculum. John has liased with the English Department in order to obtain guidelines on the assessment of language across the curriculum. These guidelines include assessment criteria for the grading of written pieces in terms of the learner's level of accomplishment in his use of the English language. As such, language is recontextualised into a component of that entity which is recontextualised as the school subject discipline of design and technology.

Design and technology also includes basic modelling skills which can be applied to the development of scale-models for prototype design in the fields of systems, architecture and interior design (41). The coffee jar example can be compared with a problem presented to learners in the case study in which they were required to design, manufacture and sell a CD rack. With this rack they had to solve a problem of current CD racks in which the gaps between the CD's are not wide enough easily to grasp the CD. These problems demand an interdisciplinary response from the learner. The coffee jar mechanism involves an understanding of the physical principles of mechanics as well as crafting skills. The CD rack requires design and crafting skills as well as an understanding of principles such as advertising and profit. These skills and principles are discussed in some detail in the classroom before

the learner is expected to offer a culminating performance demonstrating what he has learnt. There is thus a sequence to the process of acquisition of educational knowledge, signalling the framing of the process of such acquisition. It can be described as a strongly framed process in that this sequence is largely determined by the educator. The vocabulary and method of design is entrenched through the acquisition of practical and theoretical knowledge in the arts and crafts, thereby initiating the learner into the field of enquiry of design and technology. In the project example, learners undertake an ambitious modelling project in which they are required to produce a scale-model of a family car, having completed orthographic drawings of it. In the process of producing this model, the learner is expected to apply recently acquired knowledge as well as to acquire new knowledge and at the same time be assessed on what he does. What makes all of this so distinct is the two main levels of integration at work: the integration of diverse subject disciplines and the integration of learning and assessment.

The rationale for design and technology, according to Caborn, Mould and Cave (1996), is

> to be able to think about what we are trying to achieve in solving problems, so that we can learn to judge both our own and other people's solutions in a reasoned way. (1)

As such, the purpose of design and technology is to "make things work (and look) better" (1). It is thus essentially a problem-solving discipline that requires combining practical skills, such

as the use of common hand tools (181) and ways of working with materials (224) with higher order thinking skills such as the ability to investigate the aesthetic requirements of design (59) and the identification of problems (83), in order to assuage its many facets.

Returning to the example of the cam-based coffee jar opener, the principle of levers itself is not taught in one specific way. John indicates that at some times it might be appropriate to separate the physics principles from their application but this can be inverted. At other times he might first demonstrate and then explain or the learners themselves might extract the principle from a scenario that is put to them. Then variables might be introduced, such as whether its force can be calculated and so on (Interview: 06/1998).

We are thus witnessing the integration of bodies of knowledge (*cf.* Bernstein: 1975, 93) such as design and physics and the recontextualisation of the resultant body of knowledge into a new subject discipline - design and technology. The notion of recontextualisation is crucial to an understanding of the process of emergence of design and technology as a subject discipline. In the interlude that follows below, I briefly describe the process by which such recontextualisation takes place.

In Bernsteinian terms, it is through the ongoing reconstruction and recontextualisation of knowledge that new fields of enquiry

are created and refined (1990). For Bernstein, this process is made up of three components. Firstly, there is what he calls "primary contextualization" (59), which he defines as

> the process whereby new ideas are selectively created, modified, and changed and where specialized discourses are developed, modified, or changed. (59)

This notion informs the way in which a pure discipline, physics for example, is recontextualised into the school discipline that we know as a component of physical science. This is followed by secondary contextualisation in which the ideas that flow from the primary contextualisation are selectively reproduced within various contexts of educational discourse (60). For example, certain elements of school physics are appropriated into design and technology and are developed and modified for solving problems there. Thirdly, there is the "recontextualizing context" (60) in which the agents (educators) and practices (educational transmissions) function as regulatory manifestations. This recontextualising impetus operates at the level of the site of instruction *i.e.* the classroom environment. Here, various kinds of organisational processes, principles and regulatory practices are implemented by the individual educator and result in various kinds of selection: this level of recontextualisation is governed by what Bernstein refers to as hierarchical rules, sequential and pacing rules and criterial rules (52-53), that I discussed in Chapter 4. As such, it is also influenced by classification and frame, for example, it is feasible that an educator makes a decision to incorporate a section on water-supply systems as part

of satisfying the specific outcome that requires knowledge of how different societies use technology to solve their particular problems (NDE: 1997a, 84). Such a project would most likely include human geography to consider urban and rural settlement styles and mathematics and physics to consider piping applications. Certain elements of geography, mathematics and physics are thus selectively appropriated into design and technology. The way in which the educator regulates the project is the recontextualising context. The extent to which such elements become permanent features of wh t is understood as design and technology, constitutes primary recontextualisation. Fields of enquiry are thus *again* recontextualised by educators in the classroom, who make decisions regarding *inter alia* focal areas for study and timing of content on a daily basis. The recontextualising context is thus further layered by the dynamic interventions of educators at the site of transmission. These interventions define the professional role of the educator as researcher and confirms the idea of school-based curriculum development.

What makes the subject discipline of design and technology interesting in this regard, is that primary and secondary contextualisation and the recontextualising context take place concurrently. This is because design and technology is still in its infancy as a school subject discipline. While the process of primary contextualisation is underway, secondary contextualisation is taking place to establish the boundaries of design and

technology as a school subject: while elements of workplace design and technology are being appropriated into the school discipline in order to determine its nature (primary contextualisation), elements from existing school disciplines are being appropriated into school design and technology (secondary contextualisation). At the same time, educators have to make fundamental decisions about the nature of the discipline, because of the absence of clear boundary indicators during this embryonic phase of the discipline. This in turn has an upward impact on the nature of the discipline at the level of secondary contextualisation (the level at which educators make selections).

Thus, John's critical interpretation of the new curriculum suggests that the successful enactment of CASS is based on an integrated code of pedagogy. This code implies weak classification at a number of levels (*e.g.* school knowledge and everyday knowledge, recontextualisation, criteria, school subjects). John's work makes a further distinctive contribution in that it suggests that strong frame be added as a regulatory mechanism governing the control of elements such as the pacing and timing of delivery of tasks. This point will become clearer in the paragraphs that follow.

Weak Classification of Criteria

At the time of this research, John had not yet fully clarified his assessment criteria. However, he does offer commentary that

bestows a clear directionality on the development of criteria that he is working on. For example, final assessment of the portfolio is by a panel of three educators in order to address issues of bias in the grading of the learner's work. John's concern with avoiding personal bias is "so that constancy of standards can be maintained" (Interview: 1997). He is convinced however, that total objectivity is not possible. John says:

> I defy anybody to come to me and say this is a totally objective assessment. Somebody has got to set the assessment criteria and those criteria are going to be subjective to the individual who sets the criteria. (Interview: 09/1997)

In addition, he argues that to move towards objective assessments, the assessment criteria have to become very "fine grained" (Interview: 09/1997) which implies a tendency towards mechanistic assessment. This causes problems for the assessment of creative and novel responses. The fine-grained assessment that he alludes to is one of the problems of outcomes-based assessment for him, in that "it all seems to point to the fact that you have got to have a very rigid and very tight assessment structure" (Interview: 09/1997). He finds this problematic because "only one human mind can recognise another human mind as being creative" (Interview: 09/1997): since excessively tight assessment criteria may very well exclude certain possibilities as legitimate responses, John's preoccupation with boundaries and limits in his work is largely an effort to balance a technocratic approach to assessment and learning with a critical, process-oriented approach.

This presents an interesting dichotomy in John's approach to assessment: on the one hand he is working towards clear, well defined assessment criteria but on the other he is striving for an openness to creative, elegant responses. It would appear that his approach to learning and assessment is in part an attempt to reconcile these two poles. Hyland (1992) examines this issue in relation to the English National Vocational Qualification (NVQ) in detail. Hyland laments what he refers to as the "mechanistic and essentially closed NVQ framework of assessment" (46). The mechanistic nature of the NVQ is unavoidable, according to Hyland, because of defined assessment criteria or outcomes. John's work, however, counters Hyland's pessimistic view that outcomes necessarily reduce assessment to a technicist exercise. For this exemplar, the care and research that has been undertaken by John to advance thinking and understanding *as well as* skills, yields possibilities for the co-existence of both product and process. For John, the defining of criteria does not have to be at loggerheads with weakened classification.

For Bernstein (1990), the explicit criteria of visible pedagogy have two aims,

> to show the child what is missing in his or her product [and to] facilitate the ideology of pedagogic neutrality. (54)

John's approach, however, is not reducible to highlighting what is missing in a learner's work. The only way that could happen is if there is a preconceived model answer to a problem, but John feels that there are multiple possible solutions to problems in design

and technology (Interview: 09/1997). As for the ideology of neutrality that Bernstein refers to, John's starting point in the development of assessment criteria is that the inherent subjectivity and bias of the examiner is inescapable.

For John the challenge is the development of meaningful criteria that are as minimally subjective as possible, without becoming mechanically objective *and* that allow for multiple creative and interpretive solutions (Interview: 09/1997). John is currently working on such a set of criteria, using the Specific Outcomes for the Technology Learning Area of Curriculum 2005 as a point of departure.

Up to this point I have shown how weak classification and strong frame are a vital element of the contextualisation of design and technology. Up until this point I have placed my focus on the areas of school knowledge and everyday knowledge and assessment criteria. I now develop the notion of weak classification coupled with strong frame to show how the parameters that are associated with it in this work, contribute to meaningful regulation of the intrinsically open-ended pedagogical context of CASS. I argue that regulation is a desirable feature of an assessment environment as open-ended as CASS because it promotes learning as an integral component of the assessment process. I now show how certain features of John's CASS project facilitate this pedagogical regulation.

Weak Classification and Strong Framing: Central Features in Pedagogical Regulation

In this part of the research I intend to demonstrate the claim that it is feasible to maintain strong frame within a pedagogical context that is regulated by weak classification in a critical (*cf.* Stenhouse: 1975) CASS set-up. Although Bernstein (1975) does not exclude the possibility for strong frame combining with weak classification in an integrated code, he does not examine it explicitly. I undertake such an examination in this part of the chapter.

The importance of this chapter is the introduction of the notion of regulative discourse in the enactment of Curriculum 2005, with its tendency towards a reduction in conventional restrictions on the message systems of curriculum, pedagogy and evaluation. Within the exemplar school context the Design and Technology Department stands out in the extent to which the paradigm shift of Curriculum 2005 has been embraced.

In the face of a general trend away from pedagogical regulation, John's project is an exemplar of how regulation can be meaningfully applied to assessment practice without compromising the essentially critical nature of contemporary South African curriculum philosophy. Cornbleth's (1990) critical conception of curriculum falters due to its lack of analysis of the value of boundaries for practice. The technocratic approach (Cornbleth:

1990) is pedagogically stifling. The exemplar in this research develops a critical conception of curriculum (Stenhouse: 1975) that incorporates limits to practice. I analyse and explain this state of dynamic equilibrium in terms of Bernstein's conception of classification and frame.

The introduction of a set of parameters does not necessarily have to be restrictive and John is of the opinion that

> one can work intuitively and creatively within constraints. (Interview 02/1998)

Bernstein observes that

> The late twentieth century requires conforming but flexible man. (1975, 110)

For John, the ability to be flexible in conformity and creative within constraints, is important. The concept of flexible conformity seems to be a fundamental constituent of John's CASS approach. He has a lucid vision of an assessment program based on the open-ended ideals of CASS, combined with a firm belief that without clear parameters for educational discourse, there can be no meaningful educational transmission. In Bernsteinian terms, this implies an assessment system with weak classification and strong frame.

According to John, it can be enabling or empowering to provide a set of parameters, because the learners

> don't have the experiential knowledge to work without parameters. (Interview: 02/1998)

In other words, the parameters in this context take on a regulating role, bestowing directionality upon the inherent openness of design and technology. Bernstein appends to the assumptions contained within these parameters by identifying rules regulating hierarchy, sequence, and pacing and criteria (1990, 53). I now analyse using Bernsteinian concepts, some of the ways in which the parameters are implemented in John's work.

The Contract

Each learner is given a personal copy of the scope of the work (Figure v), the tasks expected of him (Figure vi), the mark allocation for each task (Figure vii) and the non-negotiable deadline dates for tasks (Figure viii). All the tasks are modify and submitted a second time at the end of the term for assessment of the portfolio as a unit. This final submission takes place during the last week of the course. Prior to commencement of the project, the learner enters into a written contract with the educator, witnessed by the parent, that he has understood and will abide by the requirements and demands of the course (Figure ix). These elements are illustrated below with extracts from the project outline itself. The extracts exemplify the weak frame of the outcomes in this exemplar, coupled with the very strong frame of the tasks and deadlines.

In Figure v below, I have selected Week 2 of the project in order to illustrate the scope of work (the complete scheme of the

project is contained in Appendix A of this chapter). The learner is supplied with a concise summary of the work covered in each class period. Note in Figure v below that period 3 is dedicated in its entirety to handing in and discussion of homework, thereby facilitating an immediate recourse and discussion of problematic, interesting or controversial responses from the learners. According to John integration of the areas of specialisation and their contextualisation in the learner's frame of reference encourages learners to provide responses that the educator did not consider. The appropriacy of these responses is discussed with the class, so that all may benefit from the collected individual solutions.

Week 2
Period 1 - 1½ hrs. **Homework due: Wed. 30th**
1. Basic 1- & 2-point perspective.
- Horizon line - 60° cone of vision.
- Vanishing point.
- Recession
- Lines of diminution.

Period 2 - 1 hr. **Homework due: Thurs. 31st**
1. Scale - human figure.
- relationship of objects.

Period 3 - 1 hr. **Homework due: Fri. 1st**

Figure v - Scope of work for week two of the project.

The scope of work is matched in each case with a set of required learner tasks (see Figure vi) i.e. outcomes. Note the tension between the relative openness of the requirements at the level of content and the definite restrictions with respect to the outcomes and the requirements of the timing of delivery of work. There is a symbiotic relationship between fixed outcomes, relaxed content and strong frame, which contradicts Hyland's (1992) concern that fixed

outcomes are necessarily stifling. These deadlines are a non-negotiable boundary of the project. This juxtaposition exemplifies the combination of open and closed codes of pedagogy contained in the CASS task.

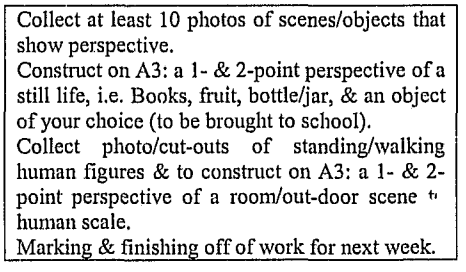

Figure vi - Required learner tasks for week two.

The learner can be in no doubt with regards to the tasks that carry marks and their weighting in terms of the scheme of work for the week as well as for the project as a whole. The mark allocation is indicated explicitly, as shown in Figure vii below.

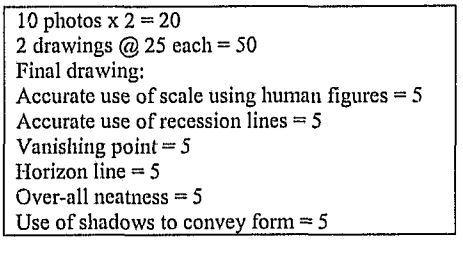

Figure vii - Mark allocation for learner responses.

An omission that could be considered a weakness of the mark allocation table and of the project as a whole, is that it does not include a scale of clear criteria by which the learner can establish the characteristics of a competent performance and a

performance that would be considered not yet competent. John indicated that this shortcoming had been noted and has been addressed for future projects of this nature (Interview 09/1997). The more recent revised form of the CASS project includes a five point scale that the educator can use as a guide in determining the extent to which the criteria have been met. I do not examine these revisions as part of this research.

The table below (Figure viii) is a list showing deadline dates for the delivery of work by learners. This calendar-type table is included with the project to assist learners in identifying days and dates for the delivery of project responses. The aim is to begin the project with the learner fully and transparently informed of the detailed requirements for its satisfactory completion (both in terms of the timing of delivery and the fulfilment of criteria). The unequivocal certainty of the delivery dates is emphasised by this inclusion in the scheme. The exact tasks that the table refers to are contained in the actual project detail, delineated in Appendix A.

Week	Mon.	Tues.	Wed.	Thurs.	Fri.
1		22nd	23rd	24th	25th
2	28th	29th	30th	31st	1st
3	4th	5th	6th	7th	8th
4	11th	12th	13th	14th	15th
5	18th	19th	20th	21st	22nd
6	25th	26th	27th	28th	29th
7	1st	2nd	3rd	4th	5th
8	8th	9th	10th	11th	12th
9	15th	16th	17th	18th	19th

Figure viii - Schedule of deadline dates.

The declaration in Figure ix, with its pseudo-legal terminology is no afterthought. It is an element of critical importance in the success of the project as a whole.

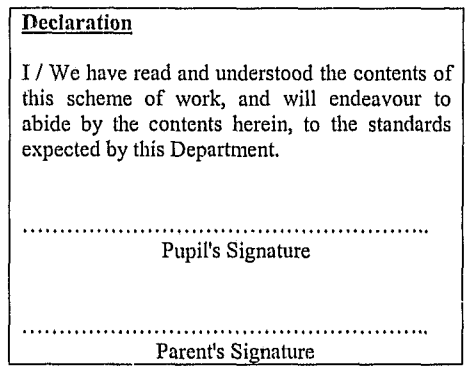

Figure ix - Contract between learner and educator.

John observes that the implementation of a contractual agreement became necessary for three main reasons. Firstly, it was necessary for the learners' parents to have some understanding of what the project was all about. For John, the best way of informing them was by sending the scheme of work home for their perusal. He notes that he and the members of his department

> got a lot of pressure from parents saying their sons couldn't cope with the work because they themselves couldn't help them. (Interview: 09/1997)

The contract is thus a response to the principle of transparency of the assessment process and the parent is seen as integral to the application of this principle (*cf.* Chapter 2). The requirement of the parent's signature on the document helps ensure that the parent does in fact get to see it.

Secondly, there was a need for

> acknowledgement that there is a responsibility in order to do the work and the responsibility must come from both the parent and the child. It is not the teacher's responsibility to see that the work gets done, it is only a partial responsibility. (Interview: 09/1997)

This conception of responsibility for doing the work relates to the changed relationship between the educator and the taught in a CASS environment. In this the approach the educator no longer carries the sole responsibility for supplying the learner with knowledge. This responsibility is now largely that of the learner, a reality that is contractually endorsed within the assessment instrument. Thus, the shift in the traditional relationship between the teacher and the taught reflects respect for learners as bearers of rights and responsibilities in their own intellectual advancement.

Thirdly, is the relative failure of previous attempts at CASS in design and technology. John and his staff have applied continuous assessment to their own projects, observing that

> We are experimenting and we are changing things in the true sense of technology. That if something doesn't work, you change it … you reassess the situation and you change accordingly. (Interview: 09/1997)

Previous forms of CASS were less formally structured and more learner-centred *i.e.* less strongly framed. These earlier efforts were not particularly successful in getting learners to deliver

the work and John notes that the contractual element, with its increased frame strength, has gone some way towards alleviating the problem. I now illustrate the overall framing of the weekly progression of the project.

Sequence, Pacing and Deadlines in the Contract

The ten weeks of the course are divided into three components. There is an introductory week in which the learner is familiarised with the concepts of graphical information and communication and how the lay person experiences them in everyday life. The second section is the body of the course and lasts six weeks. During this time learners construct their own graphical communications in the form of an advertising poster, putting the various principles of information and communication into practice as they learn them. In each week the newly acquired skills are assessed by means of five or six pieces of work that are related to the project as a whole. The level of complexity of these pieces increases markedly with the progression of the course. The final section is a graphical presentation by the learner rounded off with the opportunity to prepare portfolios for submission and final assessment.

John observes that

> the extremely broad-based concerns of design and technology make it difficult to contain the range of issues under study and also which areas should be taught before others.
>
> (Interview: 09/1997)

John's decisions on the timing and pacing of the assessment components are based on a thorough comprehension of the fundamentals of educational transmission. For example, a full week was spent on the concepts of graphic and communication. This comprehensive introduction serves to clarify the elements central to a clear understanding of the theme covered by the project. Its placement at the beginning of the course is important because the core elements of the theme need to be understood before more complex detail can be meaningfully broached. There is thus an hierarchy of knowledge at a conceptual level: for John, certain immediate elements need to be understood before other more complex elements can be understood. The objective is to simplify the assimilation of basic concepts before difficult ones are attempted.

John notes that "Each week was intended to build upon the previous week, to add a body of knowledge" (Interview: 09/1997). A facet of strong frame closely related to the timing parameters imposed by John, lies in the educator control of the *sequence* of educational transmission. Sequence in the project design is such that the learner can internalise each new concept as he encounters it and intellectually controls and owns it before moving on to the next new concept. Furthermore, each new concept is offered in a form that contains or relates to some element that is already part of his established consciousness. The learner's understanding is thus developed in terms of his own reality whilst simultaneously initiating him into the specialised reality of the community of

practitioners of design and technology. Learning takes place to the extent that new knowledge is integrated with the learner's own cultural and intellectual capital. This integration is both enacted and assessed by the project. Thus, strong framing in the form of a sequential, possibly hierarchical mode of elaboration of content is an epistemologically enabling practice in the context of this exemplar.

They contemplate how it is used in communications and to illustrate concepts and ideas, by considering examples of graphics. The tasks that are required in the introductory component of the project are in the form of a traditional written submission and an oral presentation on how the learner sees the importance of graphic communication in advertising, engineering, science and commerce, with examples to aid his explanations.

The first week serves to initiate the learners into the practice of graphic communication and what it can mean for their lived experience. The concept of graphic communication is thus introduced to the learners as a field of enquiry that has a bearing on their social reality. In this way it also serves to develop the cultural and intellectual capital that the learner brings to the site of learning.

Week two of the project reflects the aim of the project as a whole, which is "to equip the learner with a means of graphic communication" (Interview: 09/1997). As such, there is heavy

concentration on the production of acceptable, plausible drawings, with particular emphasis on one and two point perspective as well as scale and accuracy. The tasks start out with relatively simple requirements, slowly growing in complexity. There is thus a vertical relationship between certain components. In this week learners are required to show perspective simply by collecting appropriate photographs. This stems from a recognition of the fact that learners are not yet able to draw accurately and that "there is no reason to impede their progress by saying that they have to draw figures" (Interview: 09/1997). In week three learners are required to offer preparation drawings or sketches. The work that the learners produce thus slowly become increasingly more complex, as their knowledge grows. John observes,

> it is very difficult in a subject like this to know how many steps you should be teaching in order to complete a section of the work. (Interview: 09/1997)

If the steps are too close, says John, then the process of learning is in danger of being reduced to "meaningless regurgitation" (Interview: 09/1997). The alternative that John and his colleagues strive for is to "get learners to explore the world for themselves … it is only through experiential knowledge that you really learn" (Interview: 09/1997). It is to be noted that John makes this observation from within the context of a structured learning and assessment environment to which he attaches considerable value, as will be demonstrated in the second part of this chapter.

Thus, in weeks two and three, learners are initiated into the concepts of perspective and basic graphical rendering of objects. During this phase, John develops learner confidence by the encouragement of exploration rather than intimidating learners by emphasising their lack of expertise. In weeks four and five the demands become more sophisticated and a higher standard of rendering is expected. A new skill, drawing with instruments, is introduced. Scale and accuracy increase in importance.

In week six, the mid-point of the project, learners have class time at their disposal to revise what has been covered to date. They check their work and make sure previous deadlines have been met. For John, the subject discipline of design and technology "brings about a tremendous amount of self-assessment" (Interview: 09/1997). Sufficient time is made available in the classroom during weeks six and seven to complete the design and construction of an elementary model. This assures the learner the opportunity of guidance and assistance from roving educators who are available during every phase of the construction of their project responses. This section of the project concludes the learners' introduction to elementary modelling.

Week eight is the last new component of the project in which learners are required to apply their newly acquired skills to produce a graphic presentation to advertise the model created in weeks five to seven. Although the subject matter of the presentations was decided in terms of the required principles of

the project response, every learner was engaged in the production of a remarkably individual response. For example, whilst one learner opted for a computer-graphic based presentation with super-realistic artwork, another opted for conventional brush and paint and another for a combination of the two and another used pen and ink. All facilities were made available to all learners and they were free to select a medium from the range of alternatives at their disposal. In this regard John is adamant that

> There is never only one correct answer ... there are as many different answers as there are learners in the classroom.
>
> (Interview: 09/1997)

John's allowance for a multiplicity of responses to a single problem indicates a weak classification of the outcomes in a context of strong framing of pacing and sequence. Again, I draw the reader's attention to the structured context *within which* multiple valid responses are generated.

In weeks nine and ten, the closing weeks of the project, pressure on learners is relieved in that no new ground is covered. Classroom time is once again made available for rectifying problems and enhancing detail prior to the submission of the completed portfolio. The focus is on rewriting imperfect submissions and finalising drafts for grading. Thus, while the end of the term is traditionally a period of frenzied study and revision for summative assessment, in design and technology, it is a period of reduced pressure for those learners who have worked

consistently during the ten weeks of the project. It is a period of consolidation and an opportunity to reflect on the quality of their work and their understanding of the principles involved in producing the expected level of workmanship. Self assessment and peer assessment is very important during this phase of the CASS project.

John's set of parameters can take on a multiplicity of potential forms including, one or more of

> materials, time, aesthetics, mechanics, cost, tools and ability. (Interview: 02/1998)

Herein after is an example of one of his assessment projects that clearly illustrates the combination of weak classification and strong frame. The example incorporates regulatory elements including materials, time and cost is as follows: a group of Grade 10 learners is required to construct an upright column-type CD rack from Perspex (such an assignment has been undertaken by the learners in the case study school, but not in the particular exemplar under scrutiny here). The rack must cost less than R100 and be produced within three weeks. No specific boundaries are stipulated for *e.g.* the aesthetic requirements or the tooling in this particular example. Thus, different CASS projects lend themselves to different sets of pedagogical regulation. The regulators within a project can therefore vary according to the specific focus that the educator has selected for the requirements of the project at a given time. Depending on where a project is placed in the curriculum, the regulators can apply to one or more

conclusions that the educator, acting as a research professional, has deemed important in the accomplishment of the specific outcomes. In such cases, the professional judgement of the educator is paramount.

One of the most significant parameters in the exemplar is that of time, or more particularly, the timing of the delivery of items by learners for assessment purposes *i.e.* deadlines. John observes that

> Most of the learners do not have the ability to push themselves and complete the work for assessment. In the beginning we left the learner to do as he pleases to reach certain deadlines. We had class averages of 14% where deadlines were imposed only at three week intervals. The danger exists of the learner doing nothing for three weeks and this is only picked up after the three weeks is up. Then of course there is the danger that the learner may not complete it at all because what he may have done two weeks previously is no longer relevant in terms of the project that he is trying to complete. (Interview: 09/1997)

Now, in their further efforts at offering the project, daily deadlines are imposed by educators in what John calls "imposed self-motivation" (Interview: 09/1997). John and his colleagues in the Design and Technology Department say that they have learnt a lesson from their own previous efforts at heavily learner-centred assessment *i.e.* assessment with conditions of exceptionally weak frame. John candidly states:

> practically it is very difficult to have a very open-ended type of assessment, because no work gets done.
>
> (Interview: 09/1997)

He has elected to counteract this tendency by implementing clear parameters into the overall context of epistemological transmission, *i.e.* by framing the parameter-affirming particles of the project more strongly. The challenge lies in maintaining the strength of frame without compromising the critical ideals of CASS.

I believe that an educationally meaningful response to the challenge lies in educators reconsidering the nature of their professional role. As I showed in Chapter 4, this reprofessionalisation takes on significant proportions, involving firstly the internalisation of the paradigm shift in assessment policy (*cf.* Chapter 2). This means that educators must take on the challenge of school-based curriculum development from within the perspective of enlightened appreciation of CASS and its significance at a conceptual level. This conceptual enlightenment includes an understanding of the relationship between theory and practice and its implications for CASS. Secondly it entails familiarity with the official position and international attitudes on CASS (*cf.* Chapter 3). Thirdly it demands of the educator the willingness to take practical steps to enact the vision for learning and assessment that is encapsulated in a CASS approach. I see John and his department as effecting an educationally meaningful response to the challenge, and I discuss it now.

Reprofessionalisation of the Educator

There are three educators in the design and technology Department. John is the Head of Department and is a member of the GDE Learning Area Committee for design and technology. The School is a member of the current provincial design and technology Pilot Project. Two educators in the Department have been trained in the traditional way, at a training college, as woodwork teachers. John has never been trained as an educator but practised as an architect for many years and holds a master's degree in this field. He has been teaching for four years and in this time has developed an ethos of school-based curriculum development in his department.

At the time that the school made the decision to replace industrial arts with design and technology, there was no curriculum material available to draw on. John embarked upon an ambitious research project in which he considered the subject matter, content, fields of study and the context of design and technology. The detail of the early phase in the evolution of John's project lies beyond the scope of this. It warrants specifying that the research principle underlying his work lives very strongly in his quest for meaningful continuous assessment of learners. The assessment project that is examined here as an exemplar of good practice exemplifies the stage of dynamic consummation of this research principle.

In his exploration of the methodology of teaching and assessing within the context of OBE John pays particular attention to the development of CASS instruments as the primary assessment agent (Interview: 02/1998), as will become clear in this chapter. His own research project is ongoing, rather then a once-off attempt to arrive at the answer. John notes in this regard:

> I don't think we have reached the end of the road … we have to work out, for example, how to hone our criteria down so that we can become more specific. (Interview: 09/1997)

At the same time John has mentioned that he is aware of the danger that excessive specificity in the criteria can lead to mechanistic assessment (Interview: 09/1997).

One can thus conclude that John sees his curriculum proposals as experimental and in their turn the focus of continuous research. Stenhouse makes an important contribution in regard to school-based research into curricular ideas. He argues that

> The crucial point is that the proposal is not regarded as an unqualified recommendation but rather as a provisional specification claiming no more than to be worth putting to the test of practice. Such proposals claim to be intelligent rather than correct. (1975, 142)

John's offerings thus appeal to the conditions of possibility within a milieu of widening professional discretion for the human agents that give occasion to the process of educational transmission.

The educators in the case-study make an important contribution to the conceptualisation of design and technology. John, as the Head of Department, plays a pivotal role in determining the direction and nature of the discipline. For John, the term design is

> an activity that is both intuitive and rational, [the aim of which is] to solve a problem or problems within predetermined parameters. The determination of the design parameters will condition the design outcome. (Interview: 01/1998)

He bases his vision of the design process on design in nature, where

> organisms respond to environmental systems and conditions, resulting in evolutionary development and modification. (Interview: 01/1998)

John sees the human design process as a development of the process in nature. He describes it as

> the conscious, evolutionary development of artefacts and systems to satisfy human needs and problems within specific parameters. (Interview: 01/1998)

There is a parallel with the view of Caborn, Mould and Cave (1996) but what makes his vision unconventional is his placement of the apparently contradictory notions, "intuitive" and "rational", alongside one another. For John, design is rational in that the designer asks questions such as "Will it work [and] will it produce the desired outcome?" (Interview: 02/1998). At this level, the designer "consciously organises the components of the d (Interview 02/1998). The movement away from the rational towards the intuitive, is what John calls the

> move from analysis to synthesis … from the personal to the universal. (Interview: 02/1998)

He cannot fully explain the intuitive component of design, calling it a

> leap of faith … something subconscious … waking up knowing what to do. (Interview 02/1998)

The intuitive and rational components are thus probably more complementary than contradictory.

The notion of a shift from analysis to synthesis is important in terms of the notion of recontextualisation of existing knowledge forms into alternative knowledge forms and new subject disciplines. While analysis implies the separation of areas of knowledge into discrete blocks, synthesis implies recontextualisation by means of integration of multifarious knowledges. For example, the synthesis of history and geography has been undertaken in an effort to recontextualise those two subject disciplines into an alternative area of knowledge *viz.* social studies.

The lack of such synthesis between related areas of knowledge is problematic for John. Synthesis of these related areas is basic to the way he sees the enactment of the process of learning and assessment in design and technology. Without it, the full impact and value of the subject discipline as an integrated terrain cannot be realised. He thus endeavours to reduce the level of atomisation between areas of learning as a quintessential element

of the process of recontextualisation. He observes that there is a

> lack of lateral education at both primary and early secondary school levels ... the arrangement of and content of the subjects promotes linear logical thinking. The relationship between materials and structures for example, is disparately appreciated - each area of study or knowledge is seen as a separate element. [The] difficulty has been in breaking linear thinking habits. (Interview 09/1997)

John's idea of the analysis-synthesis dichotomy as a systemic problem restates Cornbleth's critique of "curriculum [as] composed of discrete components" (1990, 14). For John, it would seem that the synthesis of elements ordinarily considered to be disparate, is what allows for the meaningful recontextualisation of bodies of knowledge that commonly exhibit a high degree of classification into a conceptually coherent area of school discourse *viz.* design and technology. In terms of the shift towards deregulation of the curriculum context, such recontextualisation is largely the responsibility of the educator.

The educators see their work as learner-focused and team-teaching is utilised as a central technique: two of the three educators in the department teach the class at any given time. For example, one may lecture to the larger part of the group whilst the other assists by moving between individuals or small groups with particular problems of understanding or alternatively perhaps marks the work of a small group with learner input. Or one group might be working on the Internet or on-line encyclopaedia while

one educator follows up on homework and another assists a group in resolving an issue with which they experience difficulty. Combinations such as these make up the classroom component and lead to the production of a comprehensive portfolio reflecting the learner's development during the ten weeks of the project. This point serves to emphasise the weak classification of the teacher's work.

The final outstanding feature of the project that I make mention of is that it is not an implementation of an externally imposed scheme or curriculum, since no such material exists, given the newness of the subject discipline. Rather, it is an engagement with and an interpretation of available pointers and policy guidelines, notably Curriculum 2005. This implies that the selection of material for inclusion (or exclusion) is problematised. In terms of selection and organisation, I have shown the strength of frame to be quite clear in this exemplar. The topics for study were selected by John when he constructed the scope of work that is given to each learner. Since there is no official curriculum to follow, other than the broad specific outcomes of the Learning Area of Technology, the scope of work is John's own. In this regard the educator himself operates within a very weak frame, in that he is free to select from a practically unlimited scope of possible components for study. John has chosen to utilise strong frame at the level of the learner on the grounds that the learner needs the choice of course material made for him. John feels that when the learner enters the learning context of

design and technology, his knowledge is still at a level of unrealised potential that does not allow him to make the informed selections that the environment may demand. John's selections are made transparently and visibly, with the rationale for his choices open to all interested parties.

Conclusion

The idea of pedagogical regulation is formulated against a background in which critical openness, process and multiple valid subjectivities are held in high regard. CASS practice in an intellectual environment such as this is necessarily constructed from the to and fro of cerebral independence. In my view, John's regulative factors serve to make entry into this environment more efficient, without sacrificing learning at the altar of summative assessment. This they do primarily by a dual process of simultaneous reduction and expansion: reduction of freedoms in terms of the timing, pacing and so on, of the assessment (*i.e.* strong frame) and expansion of the possibilities that constitute feasible solutions (*i.e.* weak classification).

The challenge to educators seems to be the implementation of assessment that extends a maximal guarantee to both rational and intuitive processes, to analysis as well as synthesis. Even Cornbleth concedes that a critical conception of curriculum does not mean that planning and product development is discounted (1990, 24). It is self-evident that the integration of rational-

intuitive dualism into the design and enactment of a CASS instrument, requires considerable commitment to research and planning on the educator's behalf. The exemplar in this case study characterises such commitment.

It is important to consider the exemplar in terms of the overall context of the school. In terms of this research, a significant element of the overall context is that the changes in assessment practise that are being enacted in design and technology do not appear to be a reflection of a general trend in the school. As noted above in the remarks of the school's Head of Curriculum, it is only in the design and technology and the Afrikaans Second Language departments where there exists a unified commitment to CASS as an alternative means and mode of assessment.

Although there is no lack of commitment to an assessment policy in other departments, this commitment is manifestly more towards the residual than the emergent assessment culture. Briefly stated, I see the residual assessment culture as characterised by summative, product-oriented, collection-type assessment with an overriding focus on external examinations. The emergent assessment culture is a critical, formative, process-oriented, integrated-type paradigm. It is a self-reflective alternative that focuses on assessment as an element inseparable from the learning process. The exemplar could thus serve as a cognitive blueprint for CASS implementation strategies in the rest of the school and schools elsewhere.

Form 3 - Term 3 - Communications: Drawing & Graphic Representation & Elementary Modelling.

Scope of Work	Project Response	Mark Sheet
Graphics in Communications	Pupils to bring to school each week:	
Week 1		
1 What is a graphic?		
2 Why are graphics used in communications?	A short essay on the importance of graphic communication (3 x A4 pages) in: • Advertising. • Engineering. • Science. • Commerce. Prepare a brief 5 min. talk, & collect samples of various graphics to aid their explanations.	Content of essay = 10 ☐ Relevance of essay = 10 ☐ Use of English language = 10 ☐ Presentation/typing, use of graphics, etc. = 10 ☐ Quality of spoken delivery = 10 ☐ Visual aids, quality & quantity – 10 ☐
3 The use of graphics to explain & illustrate concepts & ideas.		
4 Examples of graphics: logos, badges, specialist printing.		
5 Plans & diagrams: bar & pie charts, graphs & matrices.		
Producing Convincing Drawings - 1- & 2-Point Perspective - Scale & Accuracy		
Week 2		
Period 1 - 1½ hrs. **Homework due: Wed. 30th**	Collect at least 10 photos of scenes/objects that show perspective.	10 photos x 2 = 20 ☐
1 *Basic 1- & 2-point perspective.* • Horizon line - 60° cone of vision. • Vanishing point. • Recession. • Lines of diminution.		
Period 2 - 1 hr. **Homework due: Thurs. 31st**	Construct on A3: a 1- & 2-point perspective of a still life, i.e. Books, fruit, bottle/jar, & an object of their choice (to be brought to school).	2 drawings @ 25 each = 50 ☐
2 Scale - human figure. - relationship of objects.		
Period 3 - 1 hr. **Homework due: Fri. 1st**	Collect photo/cut-outs of standing/walking human figures & *to construct on A3: a 1- & 2-point perspective of a* room/out-door scene to human scale. Marking & finishing off of work for next week.	2 drawings @ 25 each = 50 ☐
Week 3		
Period 1 - ½ hr. **Homework due: Wed. 6th**	Collect 10 photos of out-door scenes, & using the persp. techniques, draw your own scene. Use at least 4 preparation drawings/sketches.	10 photos x 2 = 20 ☐
Period 2 - 1 hr. **Homework due: Thurs. 7th** Perspective - scale & accuracy, & basic rendering.	Continue with the persp. from period 1, & using the rendering techniques, finish off. Drawings to be complete for handing in.	Final drawing: Accurate use of scale using human figures = 5 ☐ Accurate use of recession lines = 5 ☐ Vanishing point = 5 ☐ Horizon line = 5 ☐ Over-all neatness = 5 ☐ Use of shadows to convey form = 5 ☐
Period 3 - 1 hr. **Homework due: Fri. 8th** *Oblique views, measuring of lines at 45° angles, crating,* scale.	Explanations of oblique views: differences & similarities to *persp. Find a suitable object to draw in class – complete at* home with dimensions.	
Period 4 - 1 hr. **Homework due: Mon. 11th** Continue from period 3.	General practice. Preparatory drawings & sheet layout. Geometrical object drawing.	

Weekly Deadline Dates & Days

Week	Mon.	Tues.	Wed.	Thurs.	Fri.
1		22nd	23rd	24th	25th
2	28th	29th	30th	31st	1st
3	4th	5th	6th	7th	8th
4	11th	12th	13th	14th	15th
5	18th	19th	20th	21st	22nd
6	25th	26th	27th	28th	29th
7	1st	2nd	3rd	4th	5th
8	8th	9th	10th	11th	12th
9	15th	16th	17th	18th	19th
10	X		X	X	X

Scope of Work	Project Response	Mark Sheet
Producing Convincing Drawings – 1-2 Point Perspective Scale & Accuracy.	Pupils to bring to school each week:	
Week 4 Period 1 – ½ hr. **Homework due: Wed. 13th** Oblique views.	Recap mode of drawings, & take in drawings for marking.	Final oblique drawings: *Dimensions* = 5 Use of construction lines = 5 Neatness of work = 5
Period 2 - 1 hr. **Homework due: Thurs. 14th** 1 Isometric projection as used in. • Architecture. • Engineering. 2 Similarities to oblique representation.	Draw an Isometric projection of a given plan – duration: 2hrs class time. Pupils to continue work at home.	Final isometric drawings: Dimensions = 5 Use of construction lines = 5 Neatness of work = 5
Period 3 - 1 hr. **Homework due: Fri. 15th** Drawing with instruments: 1 "T" Square: // lines. 2 30° & 45° set squares used in conjunction. 3 Variable set square. 4 Compasses: basic geometric constr., dividing circles/hexagons, equilateral triangles. Period 4 – 1hr. **Homework due: Wed. 20th** Use of pre-made grids, drawing with instruments.	Draw on A3: Oblique Grid. Isometric Grid.	Grids: Oblique = 10 Isometric = 10
Week 5 Period 1 - ½hr. Recap of all work done so far. Questions relating to work. Period 2 - 1hr. **Homework due: Mon. 25th** Standard drawing sheet layout.	Pupils must bring to class their drawings to discuss any problems. Drawings for marking (see last week period 4). Pupils must be able to construct a standard A3 drawing sheet showing: Borders & binding border. Title blocks & info. panels. Pupils must prepare 4 sheets.	Standard drawing sheet layout: Neatness = 5 Cleanliness = 5 Quality of line work = 5
Period 3 - 1hr. Orthographic projection: American & British traditions. Period 4 - 1hr. **Homework due: Wed. 27th** Scale & dimensions. • Purpose of drawing to scale. • Dimensions.	Pupils are to draw a geometrical object from all views to be co-ordinated by projection lines, (Teacher's note: see above) must contain basic drawings to be drawn to scale. Pictures of family car, side, front & rear views. Measure the car, transfer these onto tracing overlay.	Photos = 10 Overlay & dimensions = 20
Week 6 Period 1 - ½hr. Period 2 – 1hr. **Homework due: Mon. 1st** Transfer of dimensions to reality & visa versa. Period 3 – 1hr. Continue from period 2. Period 4 – 1hr. Continue from period 2.	Recap – check deadlines from last week. Prepare orthographic drawings of car onto as many A3 sheets as required. Pupils must organise their own drawing views, dimensions, etc.	Planning = 10 Quality of line work = 10 Dimensions & annotations = 10 Over-all presentation = 10

Weekly Deadline Dates & Days

Week	Mon.	Tues.	Wed.	Thurs.	Fri.
1		22nd	23rd	24th	25th
2	28th	29th	30th	31st	1st
3	4th	5th	6th	7th	8th
4	11th	12th	13th	14th	15th
5	18th	19th	20th	21st	22nd
6	25th	26th	27th	28th	29th
7	1st	2nd	3rd	4th	5th
8	8th	9th	10th	11th	12th
9	15th	16th	17th	18th	19th
10	X		X	X	X

Scope of Work

Producing Convincing Drawings – 1- & 2-Point Perspective - Scale & Accuracy.

Week 7
Period 1 - ½hr.
Period 2 – 1hr. **Homework due: Fri. 5th**

Period 3 – 1hr. **Homework due: Wed. 10th**
Modelling with card.
Period 4 – 1hr.
Modelling with card.

Posters & Charts – Graphic Presentation

Week 8
Period 1 - ½hr. **Homework due: Wed. 10th**
Lettering - Standard lettering for plans.
-Custom lettering.
- Theme lettering.
Period 2 – 1 hr. **Homework due: Mon. 15th**
Poster design & logo design.

Period 3 – 1hr.
Continue from period 2.
Period 4 – 1hr.
Continue from period 3.

Week 9
Pupils are given the opportunity to get their portfolios up to date for final marking.

Week 10
Final marking of portfolios.

Project Response

Pupils to bring to school each week:

Pupils to hand in all drawings from previous week.
Transfer all plans to cardboard & allow for folding & joining (see pages 38 & 39of the text book).
Finalise transfer of all plans to cardboard & begin cutting & shaping.
Cutting, shaping & assembly of car.

Pupils must collect one A3 page of different lettering styles from newspapers & magazines.

Pupils must design a suitable poster (using the drawing & graphic techniques that they have learned) that advertises their own brand of car.
Pupils are to continue with their poster.

Pupils are to continue with their poster – due date: Mon. 15th

Prepare portfolios.

Hand in completed portfolios.

Mark Sheet

Neatness of line work = 10	
Arrangement of connecting tabs & folding lines = 10	
Design initiative = 50	
Complexity of model = 20	
Design & model making initiative = 20	
Quality of assembly = 20	
Use of colour = 20	
Overall impression = 20	
Letter styles = 20	
Colour = 25	
Design = 25	
Lettering = 25	
Painting techniques = 25	
Final Portfolio = 50	
Total Marks (Possible 725):	

Weekly Deadline Dates & Days

Week	Mon.	Tues.	Wed.	Thurs.	Fri.
1		22nd	23rd	24th	25th
2	28th	29th	30th	31st	1st
3	4th	5th	6th	7th	8th
4	11th	12th	13th	14th	15th
5	18th	19th	20th	21st	22nd
6	25th	26th	27th	28th	29th
7	1st	2nd	3rd	4th	5th
8	8th	9th	10th	11th	12th
9	15th	16th	17th	18th	19th
10	X		X	X	X

Declaration

I / We have read and understood the contents of this scheme of work, and will endeavour to abide by the contents herein, to the standards expected by this Department.

.....
Pupil's Signature

.....
Parent's Signature

1. The core objectives and content of the curriculum are clearly spelled out.

4	21	18	43	14
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. The assessment tasks are clearly related to these objectives and contents.

4	15	22	48	14
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. The assessment tasks are a good sample of the curriculum.

4	11	37	29	19
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. All parties - educators, learners, parents - are clear about how the assessment system works.

22	41	11	19	7
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5. The assessment tasks allow the pupil to give his best work.

4	11	21	39	25
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. The assessment system is alive i.e. it allows for the development of new objectives.

0	16	16	48	20
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. Self-assessment is involved.

9	15	15	46	15
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. Learners take part in choosing the timing and nature of the assessment tasks

31	23	17	26	3
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

The following factors are / were relevant in the implementation of Continuous Assessment :

9. The need to learn new knowledge in order to implement the new assessment.

11	21	14	43	11
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

10. The need to become involved in new conceptual frameworks.

11	18	7	50	14
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

11. Anxiety about standards.

10	10	18	29	33
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

12. Added work load without recognition.

15	23	11	33	18
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

1. The core objectives and content of the curriculum are clearly spelled out.

11	11	11	62	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. The assessment tasks are clearly related to these objectives and contents.

5	16	21	53	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. The assessment tasks are a good sample of the curriculum.

0	11	11	56	22
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. All parties - educators, learners, parents - are clear about how the assessment system works.

9	14	23	40	14
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5. The assessment tasks allow the pupil to give his best work.

0	20	10	50	20
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. The assessment system is alive i.e. it allows for the development of new objectives.

18	5	0	54	23
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. Self-assessment is involved.

11	5	11	68	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. Learners take part in choosing the timing and nature of the assessment tasks

11	17	36	36	0
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

The following factors are / were relevant in the implementation of Continuous Assessment :

9. The need to learn new knowledge in order to implement the new assessment.

5	11	32	36	16
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

10. The need to become involved in new conceptual frameworks.

0	17	22	44	17
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

11. Anxiety about standards.

0	16	16	42	26
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

12. Added work load without recognition.

0	16	32	26	26
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Chapter 7

Conclusion

I have shown in this research that I see CASS as an emancipatory form of curriculum practice that has a role to play in educator professionalism and school-based curriculum development. This is not the popular view. Indeed many educators seem to believe themselves unnecessarily bound by what they see as excessive demands and constraints implied by a system of CASS. This is a lamentable situation, because it is based on an incomplete understanding of its significance. In this research I have offered a view of CASS that not only addresses the problem of incomplete understanding, but propounds a conception that allows for the enactment of the letter and the spirit of the official position. It is a view of CASS as a form of critical curriculum practice that both advocates and supports with conceptual and practical evidence, a rejuvenated prospect of the educator as a research professional.

The Progression and Significance of the Argument

I have traced the route of CASS from inception to implementation. The logical progression of my argument begins with the contextual background to CASS in the NQF. The main submission I make *apropos* the contextual background is the set

of principles underlying CASS *viz.* legitimacy, integration and flexibility. I discuss CASS policy at the level of the NDE and its implementation by the GDE. In the next area of focus, I investigate a selection of literature from international and local perspectives on CASS. I develop the literature review into a comprehensive grounding of the CASS paradigm shift in curriculum theory. This as the most important facet of the research: I believe that without a detailed conception of the nature of the CASS paradigm shift in terms of curriculum theory, there cannot be meaningful engagement with this shift. The failure to adequately address this issue from the official perspective is a severe shortcoming of the departments of education. Finally, using the conceptual basis that I have tendered, I critically analyse an exemplar of CASS practice.

Further Policy Development and the Enhancement of Educator Professionalism

Over many years there have been calls from within educator ranks for a view of the educator as a professional. This call has included demands for more freedom, for example, to choose which literary works will be studied and what the content of prescribed text books will be. One of the thrusts of this research is that CASS, with the opportunities it presents for decentralised control over curriculum practice *i.e.* school-based curriculum development, encourages educator professionalism.

I do not believe that further infatuation with policy is required at this juncture. Educator development on a grand scale is needed now. In my opinion, CASS policy represents a paradigm shift so complete, that even enlightened educators have been taken by surprise. Unfortunately it has meant that the majority of educators have missed the point. Much of this is the consequence of ineffectual efforts at educating the educators about, and socialising them into, the new curriculum paradigm of CASS. Discussions with educators reveal a state of ignorance about CASS that I find distressing and frustrating. There is opposition to CASS from educators based on a misunderstanding of what proponents of CASS are trying to do. Educators are reproducing their own subjugation by unwittingly rejecting the offer of empowerment that CASS brings with it.

The Way Forward

The research process was illuminatory to me at both a research and a personal level in that it revealed that a CASS approach is a way of learning, not a way of assessing. This understanding of CASS is not pervasive among educators and I believe it ought to be. The way forward that flows from this lies in severing the bond with the residual paradigm and embracing the emergent paradigm with its potential for research-based professionalism and a critical, balanced mode of curriculum practice.

African National Congress	A Policy Framework on Education and Training Macmillan Boleswa: Manzini, 1995
Aronowitz, S. Giroux, H.	Education under siege Bergin & Harvey: Massachusetts, 1986
Aurbach, R.	http://www.aurbach.com/alt_assess.html#AnchorChars First published in: Vision August, 1993
Banks, B.	Times Educational Supplement 3 April, 1970
Bengu, S.	"Ignoring what's good in the new curriculum" in: Sunday Times July 6, 1997
Belanoff, P. Dickson, M. (ed.)	Portfolios: Process and Product Heinemann: Portsmouth, 1991
Berlak, H.	The Nature of Authentic Academic Achievement in:
Berlak, H. *et al* (ed.)	Towards a new science of educational testing and assessment State University of New York Press: Albany, 1992

Bernstein, B. — Primary Socialization, Language and Education
Class, Codes and Control
Volume 3
Towards a Theory of Educational Transmissions
Routledge & Kegan Paul: London, 1975

Bernstein, B. — The Structuring of Pedagogic Discourse
Volume IV
Class, codes and control
Routledge: London, 1990

Black, H. — "Assessment for Learning"
in:
Nuttall, D. (ed.) — Assessing Educational Achievement
Falmer: East Sussex, 1986

Bless, S. — "The Continuous Assessment in Science Project"
http://www.acsu.k12.vt.us/~Bless/CASP.TXT/CASPoverview.html
1996

Brereton, J. — The Case for Examinations
Cambridge University Press: London, 1944

Caborn, C. — Design and Technology
Mould, I. — Thomas Nelson: Surrey, 1996
Cave, J.

Cornbleth, C. — Curriculum in Context
Falmer: Basingstoke, 1990

Cress, K.	"Reassessing Assessment" in: The Teacher October, 1996
Cronbach, L.	Designing Evaluations of Educational and Social Programs Jossey-Bass: San Francisco, 1982
Darling-Hammond, L. *et al* (ed.)	Authentic Assessment in Action Studies of Schools and students at Work Teachers College Press: New York, 1995
Darling-Hammond, L. *et al* (ed.)	Authentic Assessment in Practice: A Collection of portfolios, performance tasks, exhibitions and documentation NCREST: New York, 1993
DeFina, A.	Portfolio assessment: Getting started Scholastic Professional Books: New York, 1992
Desforges, C.	Testing and Assessment Cassel Educational: London, 1990
Education Information Centre	Understanding the National Qualifications Framework Heinemann, 1996
Elley, W. Livingstone, I.	External Examinations and Internal Assessment : Alternative Plans for Reform New Zealand Council for Educational Research: Wellington, 1972

Farr, R. Portfolio and performance assessment Harcourt, Brace and Jovanovich: New York, 1994

Fay, B. Critical Social Science Polity Press: Cambridge, 1985

Fay, B. Social Theory and Political Practice George Allen & Unwin: London, 1975

Gauteng Department of Education Circular no 10/1996 1996a

Gauteng Department of Education Circular no 22/1996 1996b

Gauteng Department of Education Circular no 75/1996 1996d

Gauteng Department of Education Circular no 31/1997 1997a

Gauteng Department of Education Circular no 48/1998 1998

Gauteng Department of Education Circular no 8/1999 1999

Gauteng Department of Education Workshop on Continuous Assessment 26 March 1996 1996c

Gauteng Department of Education Workshop on Curriculum Development National Qualifications Framework 1997b

Gauteng Department of Education Workshop on Curriculum Development Curriculum Framework 1997c

Goodman, K.
Bird, L.
Goodman, Y.
The whole language catalog: Supplement on authentic assessment
American School Publishers: New York, 1992

Grosvenor, L. *et al*
Student Portfolios
National Education Association Professional Library: West Haven, 1993

Hargreaves, A.
Curriculum and Assessment Reform
OUP: Milton Keynes, 1989

Hart, D.
Authentic assessment: A handbook for educators
Addison-Wesley: Menlo Park, 1994

Herman, J.
Aschbacher, P.
Winters, L.
A Practical Guide to Alternative Assessment
Association for Supervision and Curriculum Development: Alexandria, 1992

Hill, B.
Ruptic, C.
Practical aspects of authentic assessment: Putting the pieces together
Christopher-Gordon: Norwood, 1994

Hoste, R.
Bloomfield, B.
Continuous assessment in the CSE: opinion and practice
Evans/Methuen Educational: London, 1975

Hudson, B.
Assessment Techniques
Methuen Educational: London, 1973

Human Sciences Research Council
Ways of seeing the National Qualifications Framework
October 1995

Hyland, T. Competence, education and NVQ's: dissenting perspectives Cassell: London, 1992

Jackson, P. Naturalistic Studies of Schools and Classrooms

in:

Apple, M. Educational Evaluation: Analysis and
Subkoviak, M. Responsibility
Lufler, H. McCutchan: Berkeley, 1974

Jasmine, J. Portfolio assessment for your whole language classroom Teacher Created Materials Inc.: Huntington Beach, 1992

Jasmine, J. Portfolios and other assessment Teacher Created Materials Inc.: Huntington Beach, 1993

Kentucky Department of Education "Continuous Classroom Assessment" at: http://www.kde.state.ky.us/caa/biat.cont.assmt.html 1997a

Kentucky Department of Education "Core Content for Mathematics Assessment" at: http://www.kde.state.ky.us/caa/ccm1.html 1997b

Kentucky Department of Education "Introduction to Core Content" at: http://www.kde.state.ky.us/caa/icc.html 1997c

Kentucky Department of Education "Program Brief: Student Assessment" at: http://www.kde.state.ky.us/commun/assessment.html 1997d

Kentucky Department of Education "Summary of Mathematics Portfolios" at: http://www.kde.state.ky.us/caa/sumofmathport.html 1997e

Kentucky Education Association "KERA Issues" at: http://www.kea.org/educators/kkeraIssues.html 1997

Kohn, A. "Grading: The Issue Is not How but Why" in: Educational Leadership October 1994

Lave, J. Situated Learning: Legitimate Peripheral Participation Cambridge University Press: Cambridge, 1991

Le Grange, L. &	Continuous Assessment
Reddy, C.	Juta: Kenwyn, 1998
Lien, A.	Measurement and Evaluation of Learning
	Wm. C. Brown: Dubuque, 1976
MacDonald, B.	"Case-study and the social philosophy of
Walker, R.	educational research"
	in:
Hamilton, D. *et al*	Beyond the Numbers Game
	Macmillan Educational: Exeter, 1977
Mackrory, P.	"Continuous Assessment"
	in:
	APT Comment, June 1996
	(1996a)
Mackrory, P.	"Continuous Assessment"
	in:
	APT Comment, September 1996
	(1996b)
Mackrory, P.	"Continuous Assessment"
	in:
	APT Comment, March 1997
Maeroff, G.	Assessing alternative assessment
	in:
	Phi Delta Kappan
	73 (4)
	December, 1991
Meighan, R.	A Sociology of Educating
	Holt, Rineheart and Winston: Sussex, 1986

Ministerial Committee for Development Work of the National Qualifications Framework	The NQF, Lifelong Learning Development and a Curriculum Framework February 1996
Mulholland, S.	"The dumbing of SA's schoolchildren" in: Sunday Times 1 June 1997
Munby, S. Phillips, P. Collinson, R.	Assessing and Recording Achievement Blackwell: Oxford, 1989
Naidu, Edwin	"Teaching for the real world" in: The Star Monday April 17, 1997
National Department of Education	Curriculum 2005 - Discussion Document 1997a
National Department of Education	Curriculum 2005 A User's Guide http://www.polity.org.za/govdocs/misc/curr2005.html 1997b
National Department of Education	Curriculum Framework for General and Further Education and Training 1996a
National Department of Education	Draft Recommendations for the Development and Implementation of Assessment Policy 1996b

Newmann, F. Archbald, D. Berlak, H. *et al* (ed.) The Nature of Authentic Academic Achievement in: Toward a new science of educational assessment State University of New York Press: Albany, 1992

Newmann, F. Secada, W. Wehlage, G. A Guide to authentic instruction and assessment: Vision, standards and scoring. Wisconsin Center for Education Research: Madison, 1995

Parker, B. Education for a Nation (Hilton College Conference) 25 June, 1997

Putland, G. "Declaration of a Heretic" Submission to meeting of Consultative Committee, 2 September 1991 University of Queensland: http://www.elec.uq.edu.au/~putland/assess/heret2-9.91

Satterly, D. Assessment in Schools Blackwell: Oxford, 1989

Soodak, L. and Martin-Kniep, G. "Authentic Assessment and Curriculum Integration: Natural Partners in Need of Thoughtful Policy" in: Educational Policy Vol. 8 No. 2, June 1994

Spencer, E. Folio Assessment or External Examination? Scottish Certificate of Education Examination Board: Dalkeith, 1979

Stenhouse, L. An Introduction to Curriculum Research and Development Heinemann Educational: Oxford, 1975

Stenhouse, L. The Study of Samples and the Study of Cases in: Murphy, R. & Torrance, H. Evaluating Education: Issues and Methods Paul Chapman: London, 1988

Stiggins, R. Assessment Literacy in: Phi Delta Kappan March, 1991

Stiggins, R. Student-Centered Classroom Assessment MacMillan College Publishing Company: New York, 1994

Vermont Department of Education — "Learning Opportunities" at: http://www.state.vt.us/educ/stand/lrnopp.htm 1997

Wiggins, G. — "Creating Tests Worth Taking" in: Educational Leadership August, 1992

Wiggins, G. — Assessing student performance Jossey-Bass: New York, 1993

Williams, R. — Problems in Materialism and Culture Verso: London, 1980

Young, J. — "Continu .s Assessment - a mixed blessing" Education in Chemistry 7, 1970

Author Holcroft E O
Name of thesis Theory And Practice In Continuous Assessment: A Discussion Of An Exemplar Of Cass Practice In A Johannesburg Secondary School, In The Light Of A Paradigm Shift In The Official Perspective On Assessment Holcroft E O 1999

PUBLISHER:
University of the Witwatersrand, Johannesburg
©2013

LEGAL NOTICES:

Copyright Notice: All materials on the University of the Witwatersrand, Johannesburg Library website are protected by South African copyright law and may not be distributed, transmitted, displayed, or otherwise published in any format, without the prior written permission of the copyright owner.

Disclaimer and Terms of Use: Provided that you maintain all copyright and other notices contained therein, you may download material (one machine readable copy and one print copy per page) for your personal and/or educational non-commercial use only.

The University of the Witwatersrand, Johannesburg, is not responsible for any errors or omissions and excludes any and all liability for any errors in or omissions from the information on the Library website.